Illinois Service Society To Hold Convention In Springfield Oct. 1

SPRINGFIELD, Ill.—State convention of the Illinois Association of Refrigeration Service Engineers' Society will be held Saturday and Sunday, Oct. 1 and 2, in the Leland hotel here.

Attendance of about 400 persons is anticipated from the five RSES chapters forming the state association and Illinois members of the Mississippi Valley chapter, which borders on both Illinois and Iowa sides of the Mississippi river.

Educational program for the two-day affair will include a showing of General Electric Co.'s refrigeration film, a talk on "Polartron" controls by a representative of Minneapolis-Honeywell, explanations of the "Sterilamp" and "Precipitron" air cleaner by a representative of Westinghouse Electric & Mfg. Co., and talks on compressor valves and motor controls by representatives of Imperial Brass and Square D Co., respectively.

Herman Goldberg, Chicago manufacturers' representative and chairman of the convention's publicity committee, also will speak.

Registration for the event is scheduled to open at 10 a.m. on Oct. 1, with the educational meeting taking up afternoon time from 1 to 4 p.m. A dinner and dance will be held that night in the Leland hotel.

Sunday's program will be devoted entirely to educational talks, scheduled from 10 a.m. to 1 p.m., when the convention closes.

Chairman of other committees for the meeting are: S. Grossberg, membership; A. L. Fait, educational; and P. W. McVay, hotel and program.

Chapters belonging to the Illinois association are Rockford, Chicago, Tri-County, Springfield, and Peoria, in addition to Illinois members of the Mississippi Valley chapter.

Officers of the association are: L. C. Nelson, president; R. C. McCarthy, first vice president; Mr. McVay, second vice president; Mr. White, secretary; and Fred Roth, treasurer.

Report Made on Assets Of G. & S. Tool Co.

DETROIT—General creditors of the G. & S. Tool & Mfg. Co., 8790 Grinnell Ave., have been notified by Trustee William G. Starr that there will be no dividend to them, inasmuch as the total preferred claims filed against the company are in excess of the amount realized from the sale of its assets.

After it was decided to liquidate the business, Mr. Starr's letter to creditors says, an offer of $2,500 was received for the sale of the assets.

Preferred claims from the various tax boards, including city and state personal taxes, social security taxes, Michigan unemployment taxes, and Federal Old Age Benefit taxes, total $1,755.20; and wage claims amounting to $1,161.70 also have been filed with the trustee.

Funds on hand will be distributed as soon as the priority of claims for wages and taxes can be determined, Mr. Starr's letter concludes, at which times the files will be closed.

Bridgeport Brass Plant Addition Completed At $4,500,000 Cost

(Concluded from Page 1, Column 5)

$4,500,000, the new plant, in which all rolling mill operations of the company will be located, marks the completion of the first major step in a long-range expansion and modernization program which was inaugurated early in 1937, according to Ralph E. Day, president and general manager of the company.

Utilizing for the first time in the non-ferrous metals industry the straight-line production principle similar to that employed in other major industries, the plant has a total floor area of more than 220,000 sq. ft., which makes it the largest single unit of the 34 major buildings maintained by the company in Bridgeport, Mr. Day said.

It is estimated that the new mill will have a production capacity of over 6,000,000 lbs. of metal per month, he stated.

In addition to the new manufacturing plant, there has been completed and is now occupied a new mill office and laboratory building in which all research, development, and testing facilities of the company are housed. Approximately nine acres of ground adjoining other plants of the company were acquired for the construction of the rolling mill and the new office and laboratory building.

Stone & Webster Engineering Corp. of Boston developed the design and had charge of the construction of both buildings as well as the installation of the equipment and Morgan Construction Co. of Worcester, Mass. were the consulting engineers, working in conjunction with company engineers, on the development of the rolling mill equipment.

Ten thousand square feet of space in the basement of the new building will be used by the Bridgeport Engravers Supply Co., Inc., a subsidiary of the company, for the special handling and finishing necessary for the production of engraver's copper for photo engraving.

The workmen's shower and locker room, also located in the basement of the new building, is provided with chairs, tables, and reading material and, with the shower facilities located in a separate room, this room may be used as a meeting place for the incoming shift.

The room is conditioned by a continuous flow of air from a central heating system that not only supplies heat but provides air cleansing, ventilation, and circulation. Heat for the entire manufacturing plant is supplied by industrial type blower units that may be used in summer without heat to provide circulation and ventilation.

"Since the plant will be devoted entirely to the production of brass, copper, bronze, and other copper-base alloys in sheets, rolls, and strips, the space now used in other plants of the company for rolling mill operations will be rearranged, modernized and, in some cases, expanded, Mr. Day continued.

"The completion of the new mill accomplishes the first step and the major part of the expansion program, and the modernization of the existing plants, including the fabricating division and the wire and rod and the pipe and tube mills, will mark the completion of the second step in a program that has been undertaken to improve and expand the production of all manufacturing branches of the company.

"The modernization and expansion of manufacturing facilities follows the establishment during the last 10 years of sales offices, branches, and warehouses in principal cities throughout the United States, making possible nation-wide distribution as well as the shipment of products to foreign countries," Mr. Day said.

N. Y. Fair Exhibitors Specify Air Cooling

(Concluded from Page 1, Column 2)

capacity operating in its air-conditioning systems, did more to familiarize the general public with the comforts of air conditioning than any other single event in the history of the industry," Mr. Henderson stated. "Installations already reported for the New York Fair will require over 1,500 tons, just twice the amount of cooling capacity of the Chicago Fair."

The air-conditioning industry's annual sales have increased more than four-fold since the Chicago Fair. Mr. Henderson expressed the opinion that there will be enough air cooling at New York's big show to put non-air-conditioned exhibits at a decided disadvantage.

Industrial exhibitors planning to include air conditioning are: Ford Motor Co., General Motors Corp., American Telephone & Telegraph Co., Eastman Kodak Co., Borden Co., National Dairy Products Co., Radio Corp. of America, United States Steel Co., Standard Brands, General Electric Co., Westinghouse Electric & Mfg. Co., American Radiator & Standard Sanitary Corp., E. I. du Pont de Nemours & Co., Carrier Corp., Yale & Towne Mfg. Co., Consolidated Edison Co. of New York, American Tobacco Co., National Biscuit Co., Beech-Nut Packing Co., Glass, Inc., Continental Baking Co., Distilled Spirits Institute, General Cigar Co., Electric Utilities Exhibits Corp., Gas Exhibits, Inc., and Johns-Manville Corp.

Detroit Salesman's Body Recovered From River

(Concluded from Page 1, Column 4)

He went to New York City in 1931 to become commercial sales supervisor for the Kelvinator branch there, remaining with that organization until 1935 when he undertook the direction of commercial sales for B. F. Gilbert Co., Kelvinator distributor in Brooklyn.

Following this connection he entered the sales department of Montgomery Ward & Co.'s Jamaica, L. I. store, later being transferred to the store in Springfield, Ill. Returning to Detroit last fall, he became associated with Gratiot Fixture & Supply Co. only a few months ago.

Mr. O'Day had been missing since last Thursday (Sept. 15) when he called his wife to inform her that he would not be home for dinner. His body, fully clothed and with glasses still in place, was found in about six feet of water not more than 150 feet from the spot where his car was found parked on Michigan Ave. One wheel of the car was jacked up, and there was every evidence that a flat tire was being repaired at the time that the car was left.

Following an autopsy, Dr. W. Thomas Love, Wayne county medical examiner, reported that death was due to drowning.

Only four $1 bills and two empty billfolds were found on the body, although officials of the company for which he worked said that O'Day had $136 in quarters, one $10 bill, and two $20 bills on his person when last seen. This money had not been located late Sunday night, and police could not account for its disappearance.

Theory of suicide in connection with the death was discounted by police on the contention that a man about to take his own life would not have stopped to repair a flat tire.

8-Year-Old Asthma Victim Comfy In Conditioned Room

(Concluded from Page 1, Column 2)

his car and rushed to Kansas City for medical treatment. They arrived late at night, and the Watson family doctor was not at home.

Mr. Watson drove to the Hotel Muehlebach and took a room for the night. Making Omar Ray as comfortable as he could, the frantic father went out to search for the doctor.

After a prolonged hunt, Mr. Watson found the physician and took him to the hotel to see Omar Ray.

Anxiously they burst into the room, the father fearful that something might have happened to his boy during his absence.

There on the bed lay Omar Ray, fast asleep, breathing deeply and regularly. Mr. Watson looked at the doctor, looked again at Omar Ray, and smiled with relief.

The asthma had been beaten by air conditioning, the hotel's system washing, cooling, and ridding the air of pollen grains.

Now Omar Ray is going to make himself at home in the hotel until the first frost comes.

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THE success and acceptance of the new Alco low cost, small capacity "TK" Thermo Valve is due to the famous Alco record of accurate control. The "TK," like other Alco Thermo Valves, restricts the line of complete evaporation to the narrowest limits—assuring highest evaporator efficiency at all times.

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THE COLD CANVASS

By B. T. Umor

The Tennis-Playing Reindel Family

Ira Reindel, Norge executive, heads a line of tennis-playing Reindels who practically amount to a dynasty in Detroit tennis. Ira, George, and John, have all been Detroit city champs—in addition to holding assorted other titles—in their day.

Last Sunday the Detroit Tennis club, in which Ira is one of the leading lights, exhibited Worlds Champion Don Budge, his partner and second-ranking American, Gene Mako, the 18-year-old Australian, Jack Bromwich, who will probably succeed to Budge's titles when Budge turns professional, and Harry Hopman, captain of the Australian Davis Cup team.

The editor and managing editor of the NEWS enjoyed the exhibition from two very fine seats, as Ira's guests. Among those present were Vice President Henry Burritt of Kelvinator, and his wife and little daughter, Barbara.

* * *

New Use For Calculus

Dr. Norbert Wiener of the Massachusetts Institute of Technology has applied calculus to the walk of a drunk. He says:

"Each step has no relation to previous steps, but calculus can show how far the drunk is likely to go in a given time."

The Detroit Free Press suggests other practical possibilities of calculus for Dr. Wiener to work on, such as the wobbly peregrinations of the New Deal.

The Free Press would like to know approximately where the New Deal is likely to land us by 1940.

* * *

After studying calculus for three semesters at college, old B.T.U. finally gleaned the general idea that this branch of mathematics made it possible to measure irregular areas, etc., which were beyond the realm of ordinary arithmetic and algebra.

So far, we've never found much practical use for calculus in the publishing business but after reading about Dr. Wiener's results, we are tempted to review the course.

* * *

Thinking about measuring the unmeasurable reminds us of the colored preacher who announced to his congregation that, on the following Sunday he would perform stupendously as follows:

"Firstly, bredern and sistern, I'se gwine to define the undefinable.

"Secondly, I'se gwine to explain the unexplainable, and

"And lastly, bredern and sistern, I'se gwine to unscrew the unscrutable."

* * *

Surprised Nominee

Harley Wall, who is now in charge of Sparton's refrigeration department, says that W. Lee O'Daniel, who won the Democratic nomination (equivalent to election) for the governorship of Texas by campaigning with a hillbilly band, had no expectation of winning when he started.

He went into the contest because he saw in it a capital opportunity of advertising his Hillbilly flour.

By running for governor, he could be assured of crowds wherever he went. And, whilst standing on a political platform which was simply the Golden Rule, he found plenty of opportunity to mention Hillbilly flour, and to give his radio act, a hillbilly band, plenty of exposure to potential listeners and potential customers.

About midway in the campaign, he

(Concluded on Page 16, Column 4)

Air Conditioning Enables Cafe Patrons To Howl, Neighbors To Sleep

SAN ANTONIO, Tex.—Air conditioning is credited with relieving a situation which has puzzled police officials for years—the problem of handling complaints about noisy eating and drinking establishments turned in by neighbors who "want to get a little sleep."

Gus Klockenkemper, police inspector, has discovered that the police have not received any complaints of loud music and other disturbances against food and drink places that are air conditioned.

During the night hours, police receive many calls from irate citizens who complain that their sleep is disturbed by noises from neighboring pleasure places. There is little police can do about this, except to request the proprietors of such places to "tone down."

"If all the eating and drinking establishments in the city were air conditioned, even including their drive-in parking places, it would be a great relief to the police department," says Inspector Klockenkemper, whose experience with the night noise problem has made him an enthusiastic booster of air conditioning.

Reason air conditioning would relieve this situation, a puzzler to police, is that all windows and doors are kept closed in conditioned buildings, and the noises do not escape to distract the neighbors.

Home Furnishings Firm Drops Air Conditioning

BIRMINGHAM, Ala. — Bromberg & Co. of this city, distributor for Airtemp air conditioning, announces it has discontinued its air-conditioning line.

Primarily a home furnishings concern, its president, Robert Bromberg, said that air conditioning had become largely a contracting business, entailing little in the way of merchandising skill, and consequently did not fit into his business. He added also that the price situation was unsatisfactory.

Trane August Shipments Exceed Those For '37

LA CROSSE, Wis.—The Trane Co., maker of air-conditioning and heating equipment, reports an upward trend in business during August with shipments for the month exceeding the corresponding period of 1937. The upturn follows several months in which this year's sales fell below those of the previous year.

The company reported a record net income of $397,113 in 1937, equal, after preferred dividends, to $1.51 a share on the 251,335 shares of common stock. For the six months ended June 30, however, the company did but little better than to break even, as against $227,000 profit before federal income taxes in the like 1937 period.

Servicemen Name Group To Study Detroit Code

DETROIT—A committee of 16 men to represent independent service men and installers and refrigeration equipment companies, in conferences with the committee which drafted the proposed refrigeration code for the city of Detroit, was named at a meeting of 200 men from these branches of the refrigeration industry, held Sept. 21 in the Diamond Temple, Grand River and Lawton Aves.

The meeting was sponsored by J. M. Oberc, Inc., refrigeration and

(Concluded on Page 9, Column 4)

Dealer Groups In N. Y. To Ask Price Contracts

Independent Associations Agree To Act Together; Chains To Support

WOODSIDE, L. I., N. Y.—Encouraged by its progress in cleaning up price cutting and related malpractices in the radio field in recent months, the Electrical Appliance Merchants' Association of Queens, at its first fall meeting Sept. 22, announced its intention of taking similar action, especially the establishment of legal price-fixing contracts, in the refrigerator field.

While the meeting officially represented only the Queens dealers, a city-wide aspect was given the movement when a representative of the Electrical Appliance Dealers' Association of Brooklyn, present at the conference, announced that his organization was ready to act "with the rest of the metropolitan associa-

(Concluded on Page 16, Column 1)

Distributor 'Invaded'; Sues For Damages

CINCINNATI—In a dispute between refrigerator distributors over an alleged "invasion" of one's territory by the other, Kelley-Mason, Inc. here has filed suit in Common Pleas court against Paul Tafel, Mary D. Tafel, and Ailleen Harrison, doing business as Tafel Electric & Supply Co., Louisville, Ky., asking judgment for $5,003.

Specifically, the suit asks $2,992 plus 6% interest from April 29, 1938, and $2,011 plus 6% interest from June 12, 1938, with costs.

First action is to obtain possession of a service reserve to which Kelley-Mason claims it became entitled when it took over Westinghouse distribution in Cincinnati territory this

(Concluded on Page 16, Column 1)

Kelvinator Branch To Supplant McDavid

BIRMINGHAM, Ala. — Kelvinator distributing operations in Alabama and western Florida, previously handled by R. P. McDavid & Co., Inc. here, have been taken over by the Kelvinator factory and henceforth will be conducted by a factory branch, according to an announcement by R. P. McDavid, president

(Concluded on Page 16, Column 5)

August Household, Commercial Sales Show Improvement

DETROIT—That sales of both commercial and household refrigeration equipment may be "on the way back" is indicated by reports of shipments by manufacturers to distributors and dealers during August, which shows comparative gains in both departments.

Shipments of commercial refrigeration and air-conditioning equipment by 14 manufacturer-members of National Electrical Manufacturers Association (Nema) totaled 12,638 units during August, as compared with 14,114 units during the corresponding month of last year.

For the same period, world shipments of household electric refrigerators, according to NEWS estimates, totaled 105,400 units, a decline of little more than 22% as compared with the estimated shipments of 135,500 units last August.

World shipments during August by Nema members alone totaled 100,144 units, as compared with 125,028 units reported last year.

(Concluded on Page 4, Column 3)

Management Congress Told Chain Stores Gain

WASHINGTON, D. C.—While the specialty store and direct-by-mail distribution are losing importance, the chain store system, unless restricted by legislation or some other artificial means, will have a larger share in distribution, O. W. Knauth, president of the Associated Dry Goods Corp. of New York City, told delegates to the International Management Congress here last week.

Department stores with medium-priced goods are gaining ground, Mr. Knauth told the congress.

Electrical goods are one of a large class of articles that seem to be relatively expensive per dollar value in pleasure received, the

(Concluded on Page 15, Column 4)

Direct-Flow Cooler For Beer Introduced By G-E

CLEVELAND — Three newly developed products—a large-size dry storage beverage cooler, a direct-flow beer dispensing system, and a 20-cu. ft. food storage refrigerator—have been added to the G-E commercial refrigeration line.

The new beverage cooler, of the dry storage type, is said to keep bottles clean, dry, and sanitary, and to eliminate loss of labels during the cooling process. Intended primarily for the cooling of bottled beer, the

(Concluded on Page 7, Column 3)

Dewey Charges Bid Collusion By N.Y. Contractors

'Coercion & Bribery' Said To Have Been Employed In Rigging Jobs

NEW YORK CITY—Accused of a plot to "rig" bids and cheat the city and private concerns out of considerable sums of money, nine members of the New York Electrical Contractors Association were indicted here Sept. 23 on misdemeanor conspiracy charges.

The indictment was obtained by Murray I. Gurfein, assistant district attorney, from the regular New York County grand jury. Six of the nine men immediately surrendered in the office of District Attorney Thomas E. Dewey, and pleaded not guilty before Judge Owen W. Bohan in General Sessions.

The six men are: Henry Fischbach, president, Fischbach & Moore, Inc.; John L. Flagg, president, Watson-Flagg Engineering Co.; Arthur S. Henry, vice president and treasurer, L. K. Comstock & Co., Inc.; Louis Kalischer, president and treasurer, Louis Kalischer, Inc., Brooklyn;

(Concluded on Page 16, Column 2)

Western Jobbers Meet, Form Association

SAN FRANCISCO—Refrigeration supply jobbers from California, Oregon, Arizona, and British Columbia, meeting recently at the Whitcomb hotel here, organized the Pacific Coast Refrigeration Jobbers Association.

Officers of the new organization are: Peter Askew of Refrigeration Supplies Distributor, Inc., Los Angeles, Long Beach, and Phoenix, Ariz., president; Robert Hinshaw of Hinshaw Supply Co., Sacramento, first vice president; Harold Stern of

(Concluded on Page 9, Column 1)

$3,000 Judgment Against Dealer Follows Fire

OAKLAND, Calif.—Apparently because a service man, in making some ordinary repairs on a refrigerator, did not discover that the motor might become too hot, a San Francisco court has given judgment against an Oakland appliance dealer in the amount of $3,000 in favor of the owner of a house that burned down, according to information received from the Appliance Dealers Protec-

(Concluded on Page 15, Column 5)

Restaurant Chain Buying Air Conditioning With Added Profits From Places Already Cooled

BOSTON—Waldorf System, Inc., which operates a large chain of restaurants throughout New England, plans to air condition all units in the system under a definite program of cost amortization.

Beginning with the Seville restaurant in 1933, the Waldorf company now has 43 air-conditioned restaurants, and present plans call for seven more systems this year.

The most recent installation was made by the Automatic Refrigeration Co. of Boston, which installed a 15-ton Frick system in the Waldorf restaurant at Framingham, Mass.

Air-conditioning systems are installed in Waldorf restaurants under the supervision of W. M. Hopwood. Costs of equipment and installation are amortized over a 10-year period, with operating expenses added.

Each equipped restaurant is credited with 50% of the increased business obtained during the months of June, July, and August, this credit going toward the cost of the equipment. After deducting restaurant overhead for that period, the management is then able to determine the extent of the profit made on the investment.

With $200,000 invested in air-cooling equipment, total equipment amortization charges for the Waldorf System, Inc. amount to approximately $20,000 a year, to which another $20,000 is added for the operation of the equipment.

Certain definite standards have been fixed for each installation. These include a maximum temperature differential of 15° F., a 50% relative humidity in summer, and 15 c.f.m. of fresh air per person, gauged on the seating capacity of the restaurant.

New Williams Cooler Goes On View at Bottlers' Show

BLOOMINGTON, Ill. — Williams Oil-O-Matic Heating Corp. will show its new Williams Serv-O-Matic bottled beverage cooler-dispenser at the twentieth annual convention and exposition of the American Bottlers of Carbonated Beverages in New York City, Oct. 31 to Nov. 4.

The new Williams unit is an automatic, motor-operated dispenser designed for use with standard sized cabinets for bottles of Coca-Cola. Insertion of a five-cent piece in the slot sets the mechanism in motion which revolves the bottle rack and brings a bottle in line with the bottle opening slot in the top of the cabinet.

Customer lifts the cover over the slot and removes his bottle of Coca-Cola.

Mechanism is driven by a motor with gear reduction drive, and which

(Concluded on Page 7, Column 1)

Profitable Sales Ideas

Mr. & Mrs. Smith Make Sales By Giving Themselves 20 Minutes To Close a Deal

WASHINGTON, D. C. — Twenty minutes to sell.

If you were allotted just this amount of time and no more with each refrigerator prospect, how would you sell him?

This is not a hypothetical case. That is actually all of the time you have, according to Mrs. P. O. Smith who, in partnership with her husband, operates a Westinghouse dealership at 413 H St. N.E., Washington, D. C.

This firm recently carried off most of the prizes in a 90-day sales campaign conducted by the Electric Institute of Washington. The partners sold 52 refrigerators.

The record is noteworthy in that the sales personnel of the firm consists entirely of Mr. Smith and Mrs. Smith. Their store is so small that there is just room enough to carry a representative stock and allow for a narrow aisle giving access to the rear of the floor from the front door. The Smiths sold 225 refrigerators last year.

9 OUT OF 10

The firm operates on the principle that all but about one in 10 prospects are sold in the first 20 minutes of contact. The Smiths do a lot of concentrated selling in those 20 minutes. There is just one follow-up effort after the first contact. It comes a month after the first sales attempt.

By that time, find the Smiths, the prospect has either been sold another box or has become an inveterate shopper. So all the enterprise that would otherwise be put into a system of following up prospects is concentrated on selling them the first time.

NO FOLLOW-UP FILE

A large follow-up file is just evidence of lazy or inefficient selling, contend the Smiths. If a prospect does not show up at the store 48 hours after the 20-minute sales talk he is conceded to be someone else's customer. If he does put in an appearance the sale is considered to be a foregone conclusion. The salesman who would allow a prospect to walk out at this point should be fired on the spot, say the Smiths.

Here is how the Smiths make use of their 20 minutes of selling time:

The prospect has been picked up from a user contact. The firm of Smith concentrates on customer service. Mr. Smith is a mechanical engineer and sells the user on expert service.

An appointment is made to call in the evening. It is Mrs. Smith's prospect. Mr. Smith waits outside in his car. Mrs. Smith goes in. She opens the conversation by advising the prospect thus:

"Before we discuss the Westinghouse refrigerator, I want to tell you something about buying a refrigerator. Don't buy one unless you know all about it. Make the salesman go over his box point by point, from top to bottom."

With this little speech, Mrs. Smith removes from the prospect's consideration several boxes he has looked at, but finds he doesn't remember much about because the salesman, in each case, did not emphasize the advantages of his refrigerator in any definite manner.

But there was one salesman who made an impression. So the prospect soon reveals to Mrs. Smith that he knows something about such-and-such a box. This is the one she has to eliminate.

WRITES THE POINTS DOWN

Mrs. Smith believes in getting the sales story down on paper. She has been selling something or other all her life. She finds that people like to plan with a pencil and a piece of paper. So she goes to work to eliminate the other box.

"I want you to know our refrigerator, the Westinghouse, from top to bottom," she says. "We'll list here the points of the Westinghouse, and here, those of the 'XQ.' You can compare them and make your decision." She lists the refrigerant, the fan, and other parts from the top to the bottom of each box.

In order to do this, Mrs. Smith has made a thorough study of other refrigerators than the one she sells. And with this knowledge she puts the salesman who has not been so industrious behind the eight-ball, because she implants in the prospect's mind the idea that he thinks was his own: "Don't buy a refrigerator unless you know it thoroughly."

CONCENTRATES ATTENTION

The 20 minutes have been taken up with listing the advantages of the refrigerator Mrs. Smith sells. There has been no wandering from the subject. The prospect knows the Westinghouse refrigerator. He also finds himself with a piece of paper itemizing the mechanical features of the two boxes.

But he is reminded that it was Mrs. Smith who explained these features in detail on paper, not the other box salesman. Mrs. Smith has rested her case with an invitation to visit the store and see her refrigerator.

She has not assumed that the prospect is interested in buying from a price standpoint.

Just to see what the other fellow is doing, Mrs. Smith frequently takes a day off and goes out shopping for a refrigerator. As a refrigerator prospect, she studies the methods of salesmen and knows exactly what they have to say about their boxes and her own.

For instance, Mrs. Smith often becomes the technically minded prospect. She may inquire: "Is this a sealed box?"

"Be technical right back at her," says Mrs. Smith. "If you try to simplify every technical term for her, she becomes confused. If she asks: 'Is this a sealed box?' I reply, 'Yes, it has a sealed mechanism,' and bring into play from there on every big word I can think of about the refrigerator. She drops the technical line of questioning in a hurry.

KEEP FOOD IN BOX

"As far as selling a woman is concerned, there is only one way, I find, to make a sure thing of it. Show her a box in operation with food in it."

In spite of her study of the refrigerator she sells, Mrs. Smith occasionally becomes involved with a man who is a nut on the mechanical end of it. Her "out" is: "I can tell you your wife's side of it, but I am just a salesman, not a mechanic. You'll have to ask Mr. Smith. He's an engineer." She finds that the mechanical bug usually just wants to show off his knowledge and that when he faces the prospect of being put into the ring with an engineer, he changes the subject.

The Smiths find that no sales staff is too small to run sales contests. The two partners frequently hold contests in which they are the only contestants. In a recent campaign of one month, a prize of $10, to be paid by the loser, was agreed upon for the one who sold the largest number of big boxes.

Direct Results Obtained By Concentrating Efforts On Architects, Builders

TOLEDO—A service in which one man specializes in supplying information about all-electric kitchens to architects and builders has paid dividends to the Toledo Edison Co., as well it might to any distributor of major appliances.

The man who promotes the planned kitchen idea to the architect uses the theme, "sell the wife through the kitchen." Idea back of this, of course, is that the architect or builder who is trying to sell some plans to prospective homeowners will have better luck if he demonstrates to the housewife that he will provide her the kind of a kitchen of which she has dreamed.

Another duty of the utility's contact man is to provide the architect with drawings, pictures, and floor plans for his specifications book, together with any other information that may be necessary to provide a complete kitchen plan.

One of the factors needed to make such an activity a success is careful selection of the individual who is to do the contacting of the architects. The Toledo Edison man is the son of a builder, and also a man who knows something about electrical appliances, and he has fitted into the position very satisfactorily, officials of the company affirm.

Another 'Crusade' Is Launched

Electrical League of the Niagara Frontier officials launch "Wife Saving Crusade" to draw attention to electric washers and ironers. (Left to right): Herbert I. Sackett, league president; S. S. Vineberg, manager; and Robert D. Glennie, chairman, Appliance Merchandising Committee.

'Rules' For Displays That Will Bring Out The Buying Urge Explained By Hecker

CLEVELAND—Importance of intelligent and attractive displays in promoting sales of electrical appliances and other merchandise was emphasized by Carl V. Hecker, national display manager of Montgomery Ward & Co., Chicago, in an address at the second annual clinic at the Electrical Merchandise Mart sponsored here recently by the Electrical League of Cleveland.

Eighty seven per cent of the people buy on sight, Mr. Hecker said, compared with 7% who buy on sound, 3% on smell, 1½% on touch, and 1% on taste. Outlining some basic rules for good displays, Mr. Hecker was one of four featured speakers at the mart.

BUYERS ATTEND

Fourteen distributors and manufacturers had equipment exhibits at the mart, held on the ninth floor of the Cleveland hotel. Several hundred dealer-buyers within a radius of 75 miles of Cleveland attended during the three-day event.

Speakers at the clinic, in addition to Mr. Hecker, were K. W. Berkey, educational director for Westinghouse Electric & Mfg. Co.; and E. J. Lowrey, divisional sales manager for Iron Fireman Co. J. E. North, Electrical League president, made the opening remarks, and Ralph Jones, secretary, presided.

Introduced at a dinner meeting the night of the clinic was a "Right Hon. Arthur B. P. Huxby, chairman of the board of Electrical Industries, Ltd., London," who, after leveling some scathing criticism of American business methods, turned out to be Arthur F. Briese, the "Knight of Satire" from Chicago.

THE 3 RULES

Since there is no permanent patronage for any store, Mr. Hecker told the clinic audience, it is necessary for stores to bring customers in by the various media of display advertising. Displays, like advertisements, must do three things: attract attention, arouse desire, and stimulate action.

In analyzing the elements of display, Mr. Hecker urged appropriate colors—general light colors in the summer, and dark colors in winter.

Refrigerator manufacturers make a mistake when they insist on using red, a heat-suggestion color, for display backgrounds, he said.

Timing also is important, he said. He told of having checked 500 newspapers during the last week in June and finding thousands of dollars worth of advertising on "June Bride" items, long after such buying is usually done.

WHY SHOPPERS QUIT

From a prepared chart of reasons why people quit doing business with a store, he pointed out that 6% stop because of poor store arrangement, whereas only 1% quit because of poor advertising. High prices account for 14%, delay in service, 10%, and poor quality, 10%.

Vital part which the demonstration plays in sales was emphasized by Mr. Berkey, who urged that the indifference toward this basic element, especially noticeable during the past six months, be curbed by dealers and salesmen.

Demonstrations are still the key to sales, he said—and better demonstrations make faster and surer sales.

Application of an appliance's features, rather than its mechanical merits, should be stressed, he declared. He made two practical recommendations:

METHOD FOR SALESMEN

1. When a new prospect approaches, first ask, "Is this your first experience in buying . . .?" This question usually reveals what is in the mind of the shopper, and how these questions can be answered.

2. Write down what the prospect says she expects in the appliance she is buying, and prove to her, from this list, that the appliance you're selling has these features.

Exhibitors at the mart, who showed major appliances, small appliances, and related goods such as radios, lamps, electric trains, electric razors, roasters, all-metal coffee urns, waffle-iron and toaster combination, etc. included:

Blackstone Mfg. Co., Dominion Electric Mfg. Co., Inc., Frigidaire Corp., General Electric Supply Corp., Graybar Electric Co., Midland Electric Co., Nesco National Lighting Equipment Co., Proctor Electric Co., Railley Corp., Steam Electric Iron Co., Strong, Carlisle & Hammond.

Taylor Electric Host To Bendix Traveling Troupe

MILWAUKEE — Taylor Electric Co. was host to 150 dealers and salesmen of Bendix home appliances at a sales meeting here Sept. 20.

J. A. Taylor and Paul R. Dye of the distributing firm were in charge of the meeting. Principal speakers were C. V. Calkins, assistant sales manager of the Bendix company, and C. C. Wilmot, advertising counsel.

For Information on Motors FOR ALL TYPES OF Air Conditioning and Refrigeration Equipment WRITE TO Wagner Electric Corporation 6400 PLYMOUTH AVE. ST. LOUIS, MO.

PENN AUTOMATIC CONTROLS AND SWITCHES
Protect the reputation of your product
Write for Catalog
PENN ELECTRIC SWITCH CO.
GOSHEN, INDIANA

Anaconda Copper Refrigeration Tubes for difficult jobs!

THE AMERICAN BRASS CO
FRENCH SMALL TUBE BRANCH
General Offices Waterbury, Conn.

"Expansion by name Expansion in Quality"
SUPERIOR VALVE & FITTINGS CO.
500-37TH ST. PITTSBURGH, PENNA.
"FORBES" PRODUCTS
Manufacturing a complete line of DIAPHRAGM PACKLESS VALVES, MANIFOLDS, ACCESSORIES and FITTINGS for the Refrigeration and Air Conditioning Industry.

BUNDY TUBING
Copper-Brazed Steel. Copper Coated Inside and Out. Sizes: ⅛" to ⅞" O.D.
BUNDY TUBING CO., DETROIT

Build both PROFITS and PRESTIGE with Copeland
Commercial Refrigeration
There's a double satisfaction in selling Copeland Commercial Refrigeration. First, of course, is the extra PROFIT offered by this quality-line. And second, there's the satisfaction of knowing that every Copeland you sell adds to your reputation and prestige.
Write today for FULL FACTS about Copeland's profit opportunity.

COPELAND REFRIGERATION CORPORATION, Sidney, Ohio

VIRGINIA QUALITY REFRIGERANTS

• METHYLENE CHLORIDE
• EXTRA DRY ESOTOO
• V-METH-L
VIRGINIA SMELTING CO.
W. NORFOLK, VA.

ALCO
SAVE 20-40%
Write for details of Alco's new Small Capacity "TK" Thermo Valve
Alco Valve Co. - St. Louis, Mo.

Rules Outlined For FHA Financing of Stoker And Air-Conditioning Installations

WASHINGTON, D. C.—Provisions of the Federal Housing Administration's Property Improvement Credit Plan make it possible for purchasers of air-conditioning systems or stokers to make such installations and pay for them on a convenient, equal-monthly-payment basis.

The Federal Housing Administration once more provides government insurance on such loans made by private financial institutions through authority granted by amendments to the National Housing Act which restored the Property Improvement Credit Plan last February.

Regulations established by the FHA approve air-conditioning systems as eligible for these government-insured loans. The regulations admit these systems as eligible where the installation is a distributing or intake duct system, or both, and involves:

"A structural alteration to the building such as:

(a) A hole or opening through an inside or outside wall, or,

(b) A hole or opening through the ceiling or floor, or

(c) Permanent attachment of the duct to the building by bolts or screws driven into or imbedded in the rafters, beams, or masonry of the structure."

PERMANENT DUCTWORK

All ductwork, regardless of length or size, must be permanently built into the structure and must be an integral part of the structure. Ductwork that is simply set on the floor, nailed or hung to the wall or ceiling, without requiring permanent attachment to the rafters, beams, or masonry, is not considered built-in or permanently installed.

It is also necessary that the equipment be permanently connected to the water and electric systems of the structure. Also, air conditioners installed in connection with a furnace, utilizing the furnace ducts for distribution of the conditioned air, are eligible for insured financing.

Self-contained and unit air conditioners are not eligible.

In general, the FHA has ruled that equipment and machinery that would be utilized as a part of the productive process of an establishment is ineligible under the Property Improvement Credit Plan. In this connection, the FHA has ruled that refrigeration equipment for commercial establishments, such as refrigerated show cases, is not eligible. The FHA is not authorized to insure loans made for the purpose of financing the cost or purchase and installation of such equipment, machinery, or trade fixtures.

STOKER ELIGIBILITY

Stokers, installed in such a manner as to become a permanent and integral part of the heating system of an establishment, are eligible for financing under terms of the Property Improvement Credit Plan. Stokers which are to be used exclusively to supply power to productive machinery are not eligible. When they serve a dual purpose, however, supplying both heat and power to an establishment, they are eligible.

In all cases of eligibility the FHA determines whether the loan is insurable or not. Full particulars concerning any specific case are available at any office of the Housing Administration.

Property improvement loans in amounts up to $10,000 may now be made by private financial institutions qualified to have such loans insured by the Federal Housing Administration. The borrower must meet certain requirements. He must have an adequate income, and good credit rating, and must own the property to be improved or hold a lease upon it running at least six months longer than the term of the loan.

The restored Property Improvement Credit Plan also makes the stipulation that where an advance of credit to any one borrower is in excess of $2,500, prior approval of the FHA must be obtained by the lending institution.

To obviate any possible misunderstanding as to the function of the Federal Housing Administration in the provision of property improvement credit, its part in the program should be understood by potential borrowers.

The FHA lends no money. It acts as an insuring agency, insuring private lenders against loss. It is these agencies, qualified by the FHA, which make the loans.

The borrower, in turn, has as long as three to five years in which to repay the loan. The charge in no case may exceed an amount equivalent to a $5 discount per $100 face amount of a one-year note payable in equal monthly instalments.

Throughout the country there are more than 4,500 financial institutions which make property improvement loans under the plan. These loans are available to borrowers of good credit standing in virtually every community. When meeting FHA requirements, persons desiring air conditioning, or stoker installation financing, may utilize this method of improving his establishment and enjoy the convenience of a regular repayment plan.

Proprietor's Son Hears Of Air Cooling, Bowling Alley Business Jumps

CINCINNATI — Bowling alleys have been operated by the Mergard family here for the past 35 years, but the traditional "summer slump" in business was never counteracted until Herman Mergard, Jr. authorized the installation of a 30-ton air-conditioning system this year.

Since the air-cooling equipment was installed, the entire 20 alleys and 10 billiard tables were in use every night through the summer. In addition to providing year-around comfort, the air-conditioning system has taken care of the excessive smoke present when a large number of patrons were bowling.

The formation of summer bowling leagues, backed by strong advertising, has kept the winter customers coming back. Mr. Mergard also reports a great increase in women bowlers during the summer months this year.

Belsey Dealers 'Earn' Extra Promotion Aid

LOS ANGELES—Practical application of the maxim that "good things come in small packages" has resulted in an increase of 18% in electric range sales during the past two months for George Belsey Co., General Electric distributor in this territory.

When the Belsey organization made an extra appropriation to boost the regular cooperative range advertising funds, R. E. Mangan, advertising manager, felt that the situation called for handling the sales promotional material in a different way.

So he devised the idea of arranging the material in five different packaged sets, to be distributed to dealers as they qualified.

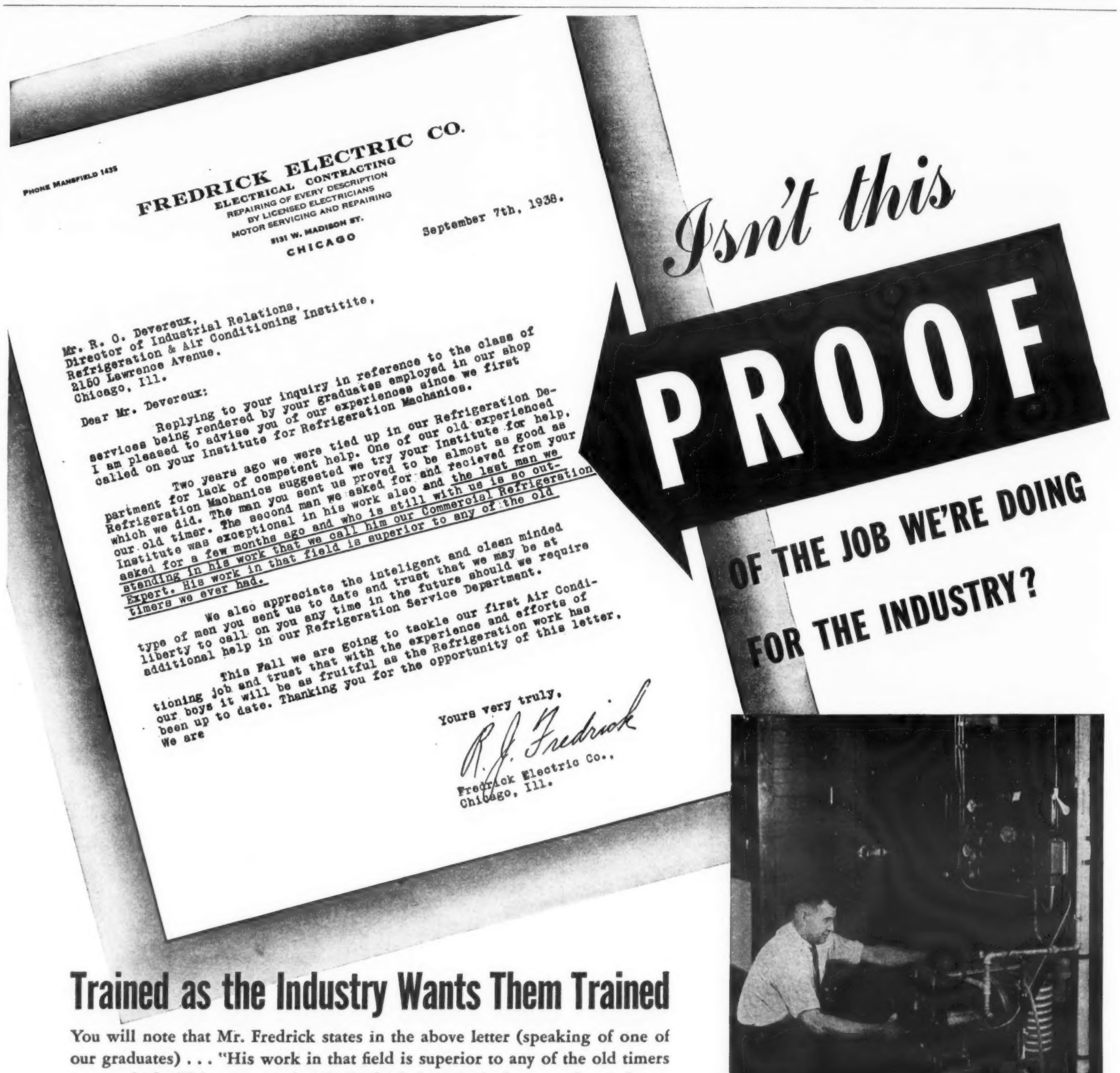
That packaging the material is good psychology is evidenced by the fact that sales during the first two months of operation increased 18% over any previous similar period of the year.

Clinton Brown Directs Hotpoint News Bureau

CHICAGO—Clinton Brown, Hotpoint campaign manager, has been made head of the new Hotpoint news bureau organized to collect and disseminate news stories, articles, and features of interest to the major appliance section of the industry, announces W. A. Grove, sales promotion and advertising manager of Edison General Electric Appliance Co., Inc.

During his decade with Hotpoint, Mr. Brown has become known for the ingenuity of his sales campaign ideas for utilities and dealers, and for his motion picture, slide film, and radio programs, visualizers, "gadgets," and sales equipment designed to help the retail salesman.

A writer by profession, Mr. Brown has a background of more than 20 years in newspaper work in various metropolitan cities, and has to his credit a book of philosophical rhymes, "Songs in Slang," published a year ago.


PHONE MANSFIELD 1435
FREDRICK ELECTRIC CO.
ELECTRICAL CONTRACTING
REPAIRING OF EVERY DESCRIPTION
BY LICENSED ELECTRICIANS
MOTOR SERVICING AND REPAIRING
5131 W. MADISON ST.
CHICAGO
September 7th, 1938.
Mr. R. O. Devereux,
Director of Industrial Relations,
Refrigeration & Air Conditioning Institite,
2150 Lawrence Avenue.
Chicago, Ill.
Dear Mr. Devereux:
Replying to your inquiry in reference to the class of services being rendered by your graduates employed in our shop I am pleased to advise you of our experiences since we first called on your Institute for Refrigeration Machanics.
Two years ago we were tied up in our Refrigeration Department for lack of competent help. One of our old experienced Refrigeration Machanics suggested we try your Institute for help, which we did. The man you sent us proved to be almost as good as our old timer. The second man we asked for and recieved from your Institute was exceptional in his work also and the last man we asked for a few months ago and who is still with us is so outstanding in his work that we call him our Commercial Refrigeration Expert. His work in that field is superior to any of the old timers we ever had.
We also appreciate the inteligent and clean minded type of men you sent us to date and trust that we may be at liberty to call on you any time in the future should we require additional help in our Refrigeration Service Department.
This Fall we are going to tackle our first Air Conditioning job and trust that with the experience and efforts of our boys it will be as fruitful as the Refrigeration work has been up to date. Thanking you for the opportunity of this letter.
We are
Yours very truly,
R. J. Fredrick
Fredrick Electric Co.,
Chicago, Ill.
Isn't this
PROOF
OF THE JOB WE'RE DOING
FOR THE INDUSTRY?

Trained as the Industry Wants Them Trained

You will note that Mr. Fredrick states in the above letter (speaking of one of our graduates) . . . "His work in that field is superior to any of the old timers we ever had." This comment by Mr. Fredrick is typical of many other endorsements we receive from dealers and jobbers everywhere . . . who recognize this NEW TYPE OF CRAFTSMEN as being especially trained to suit their needs.

All R.A.C.I. graduates have had 1000 hours of home study, plus four weeks (since July 1, 1938) of intensive shop work in our new and modern laboratories in Chicago—where, working on equipment valued at more than $100,000, they have had to dismantle, rebuild, install and service ALL TYPES of conventional air conditioning and refrigeration equipment.

TRAINING IS SUPERVISED BY A MANUFACTURER-APPOINTED BOARD OF GOVERNORS

MORE THAN 100 MANUFACTURERS *OFFICIALLY* ENDORSE AND RECOMMEND THIS TRAINING

FREE PERSONNEL SERVICE—The individual qualifications of each R.A.C.I. graduate are recorded in a convenient form for your inspection. Our Placement Service is free to employer and graduate alike. Let us send you the records of a few of our graduates in your neighborhood.

Refrigeration & Air Conditioning Institute

2130-2158 LAWRENCE AVENUE • CHICAGO, ILLINOIS

Sales Figures

August Nema Household Refrigerator Sales To Distributors Total 100,144 Units

The following 17 companies reported sales to the Refrigeration Division of the National Electrical Manufacturers Association (Nema) on household electric refrigerators for the month of August, 1938:

Apex Electrical Mfg. Co., Crosley Radio Corp., Edison General Electric Appliance Co., Inc., Fairbanks, Morse & Co., Frigidaire Corp., General Electric Co., Gibson Electric Refrigerator Co., Johnson Motors Co., Kelvinator Div. Nash-Kelvinator Corp., Leonard Div. Nash-Kelvinator Corp., Norge Div. Borg-Warner Corp., Sparks-Withington Co., Stewart-Warner Corp., Sunbeam Electric Mfg. Co., Uniflow Mfg. Co., Universal Cooler Corp., and Westinghouse Electric & Mfg. Co.

Merchant & Evans Co. did not report.

The sales of the reporting companies do, however, include units manufactured for the following concerns: Montgomery Ward & Co., Potter Refrigeration Corp., and Sears, Roebuck & Co.

SALES FOR AUGUST, 1938	Domestic	Canadian	Other Foreign	Total World
Lacquer (Ext.) Cabinets Complete				
1. Chest	275	2	277	554
2. Less than 3 cu. ft.	...	333	3	336
3. 3 to 3.99 cu. ft.	2,482	11	1,095	3,588
4. 4 to 4.99 cu. ft.	16,641	788	2,898	20,327
5. 5 to 5.99 cu. ft.	13,163	908	2,335	16,406
6. 6 to 6.99 cu. ft.	33,466	407	1,084	34,957
7. 7 to 7.99 cu. ft.	7,345	102	467	7,914
8. 8 to 9.99 cu. ft.	4,406	34	127	4,567
9. 10 to 12.99 cu. ft.	14	...	...	14
10. 13 cu. ft. and up	4	...	2	6
11. Total Lacquer	77,796	2,585	8,288	88,669
Porcelain (Ext.) Cabinets Complete				
12. Up to 4.99 cu. ft.	17	...	28	45
13. 5 to 5.99 cu. ft.	914	36	242	1,192
14. 6 to 6.99 cu. ft.	3,432	4	181	3,617
15. 7 to 7.99 cu. ft.	1,376	1	53	1,430
16. 8 to 9.99 cu. ft.	1,669	4	86	1,759
17. 10 to 12.99 cu. ft.	178	3	25	206
18. 13 cu. ft. and up	394	1	53	448
19. Total Porcelain	7,980	49	668	8,697
20. Total—Lines 11 and 19	85,776	2,634	8,956	97,366
21. Separate Systems ¼ hp. or less	315	442	787	1,544
22. Separate Household Evaporators	638	481	115	1,234
23. Total—Lines 20, 21, and 22	86,729	3,557	9,858	100,144
24. Condensing Units ¼ hp. or less	363	339	283	985
25. Cabinets—No Systems	38	1	5	44
Index Value* of Total Dollar Sales	107.0	288.0	94.2	107.0

*Based on weighted sales for 1934, 1935, and 1936.

Beverage Cooler Gains Continue In August

(Concluded from Page 1, Column 4)

In the August commercial refrigeration and air-conditioning summary, "packaged" items continued to stand out in shipments compared with comparative 1937 totals. Shipments of complete ice cream cabinets by Nema members amounted to 1,247 this August, compared with 1,047 units in the same month last year; and bottled beverage coolers led 1937 shipments for the comparable period with 1,640 units against 1,364.

Self-contained air conditioner shipments reported by Nema members again led comparable 1937 totals by a considerable margin, this year's total being 989 units in both residential and store units, as against but 51 units reported last August, when all shipments were lumped.

Refrigerator Tax Collections Drop Sharply In August

WASHINGTON, D. C. — Excise taxes on mechanical refrigerators dropped sharply during August of this year, amounting to $418,762.09 as compared with $895,323.53 during the same month last year, according to statistics compiled by the office of the Commissioner of Internal Revenue.

Manufacturers' Sales In N.Y. Double Those Of Any Other State

States and Territories	Quantity Household Low Sides August	Cumulative
Alabama	482	9,503
Arizona	155	2,656
Arkansas	341	6,149
California	6,067	72,268
Colorado	445	7,889
Connecticut	1,243	14,315
Delaware	208	2,084
District of Columbia	1,499	12,582
Florida	2,007	11,568
Georgia	1,281	13,100
Idaho	65	3,862
Illinois	5,540	88,270
Indiana	1,150	24,884
Iowa	927	19,929
Kansas	334	12,012
Kentucky	799	12,787
Louisiana	882	13,836
Maine	236	4,852
Maryland	1,009	13,170
Massachusetts	5,478	40,771
Michigan	5,138	43,838
Minnesota	1,149	27,081
Mississippi	289	5,316
Missouri	1,748	30,649
Montana	122	2,984
Nebraska	375	8,328
Nevada	42	1,171
New Hampshire	338	2,988
New Jersey	3,877	39,636
New Mexico	134	2,052
New York	17,423	132,902
North Carolina	980	18,773
North Dakota	118	2,419
Ohio	4,934	55,487
Oklahoma	539	12,079
Oregon	425	8,706
Pennsylvania	8,741	92,273
Rhode Island	282	4,066
South Carolina	398	7,960
South Dakota	117	2,567
Tennessee	965	15,430
Texas	3,629	49,647
Utah	195	5,996
Vermont	95	2,638
Virginia	1,427	15,261
Washington	1,395	17,375
West Virginia	628	9,681
Wisconsin	999	22,058
Wyoming	79	1,388
Total United States	86,729	1,027,236
Canada	3,557	36,124
Other Foreign (Including U. S. Possessions)	9,858	86,461
Total For World	100,144	1,149,821

Barker Resigns Post In New Orleans Territory

CHICAGO—Raymond L. Barker has resigned his position as New Orleans district merchandise manager for the Carrier Corp. and is at present making his headquarters at his home at 1549 E. 65th St. here. Mr. Barker was with Peerless of America, Inc., before he took the New Orleans post for Carrier.

Kelley-Mason Adds More Westinghouse Products

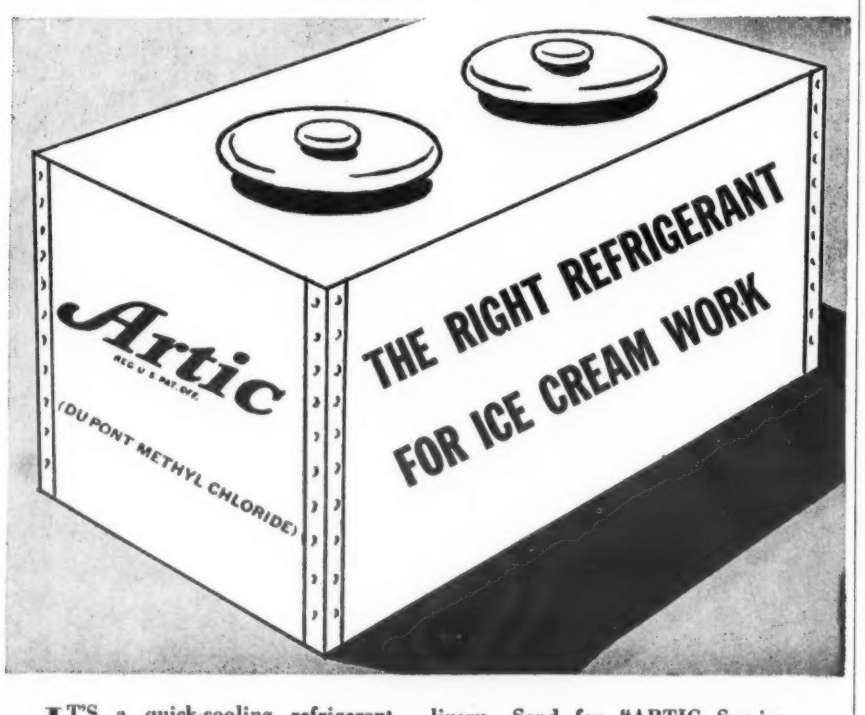
CINCINNATI — Kelley-Mason Co. has been appointed distributor of small appliances in the Cincinnati territory for Westinghouse Electric & Mfg. Co. John S. Kelley, Jr., is president of the company, which distributes Westinghouse refrigerators.

12,638 Commercial Refrigeration Systems Sold To Distributors In August By 14 Manufacturers

The following report of commercial refrigerating and air-conditioning equipment sales for August, 1938 was made to the Commercial Refrigeration Section of the National Electrical Manufacturers Association (Nema) by the following 14 companies:

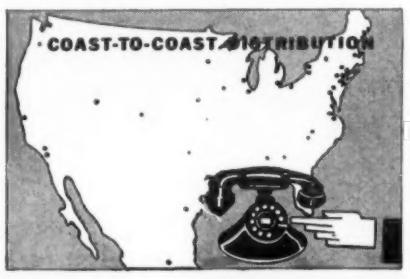
Brunner Mfg. Co., Carrier Corp., Crosley Radio Corp., Frigidaire Corp., General Electric Co., Gibson Electric Refrigerator Co., Kelvinator Div. Nash-Kelvinator Corp., Merchant & Evans Co., Norge Div. Borg-Warner Corp., Servel, Inc., Uniflow Mfg. Co., Universal Cooler Corp., Westinghouse Electric & Mfg. Co., and York Ice Machinery Corp.

SALES FOR AUGUST, 1938	Domestic Quantity	Domestic Value	Canadian Quantity	Canadian Value	Other Foreign Quantity	Other Foreign Value	Total World Quantity	Total World Value
1. Bottle Water Coolers—Complete	361	$ 23,403	2	$ 122	32	$ 2,271	395	$ 25,796
2. Pressure Water Coolers—Complete	1,582	175,532	15	1,297	111	11,557	1,708	188,386
3. Water Coolers—Low Side Only	62	4,396	....	....	7	355	69	4,751
4. Ice Cream Cabinets—Complete	1,087	182,891	33	5,132	127	17,935	1,247	205,958
5. Ice Cream Holding Cabinets Only (Remote)	134	17,376	3	412	5	646	142	18,434
6. Bottled Beverage Coolers—Complete	1,512	159,640	31	2,592	97	9,800	1,640	172,032
7. Beverage Coolers (No High Sides)	98	12,441	....	....	28	1,300	126	13,741
8. Milk Coolers—Complete	57	6,688	....	....	1	180	58	6,868
9. Milk Cooling Cabinets (No High Sides)	....	....	....	....	....	....	....	....
10. Self-Contained Air Conditioners Air Cooled—All Sizes	650	131,487	1	210	32	7,322	683	139,019
11. Self-Contained Air Conditioners Water Cooled—Under 2 Hp.	128	28,895	2	410	18	6,046	148	35,351
12. Self-Contained Air Conditioners Water Cooled—2 Hp. and Up	152	82,730	4	2,244	2	920	158	85,894
13. Air Conditioners—Central Stations 5-Ton Capacity and Over	72	35,642	....	....	1	346	73	35,988
14. Air Conditioners—Floor Type (No High Sides)	95	28,276	3	1,860	13	5,411	111	35,547
15. Air Conditioners—Ceiling (Cooling Only—No High Sides)	86	12,459	....	....	15	1,757	101	14,216
16. Air Conditioners—Ceiling Type (Equipped for Heating—No High Sides)	25	10,987	....	....	3	1,680	28	12,667
17. Air Conditioners—Residential Type (No High Sides, Boilers, or Furnaces)	59	12,657	....	....	9	2,025	68	14,682
18. Condensing Units Less Than ⅓ Hp.	1,027	40,342	41	2,536	286	17,851	1,354	60,729
19. Condensing Units—⅓ Hp.	1,555	99,863	43	3,918	338	28,608	1,936	132,389
20. Condensing Units—½ Hp.	1,001	104,578	28	3,386	192	22,155	1,221	130,119
21. Condensing Units—¾ Hp.	724	97,876	21	3,264	130	18,785	875	119,925
22. Condensing Units—1 Hp.	430	68,294	11	1,949	60	11,429	501	81,672
23. Condensing Units—1½ Hp.	222	45,678	6	1,396	44	9,609	272	56,683
24. Condensing Units—2 Hp.	103	24,641	3	842	16	4,114	122	29,597
25. Condensing Units—3 Hp.	68	21,514	....	....	40	8,608	108	30,122
26. Condensing Units—5 Hp.	47	21,638	....	....	6	2,799	53	24,437
27. Condensing Units—7½ Hp.	43	29,288	3	2 239	5	3,139	51	34,666
28. Condensing Units—10 Hp.	36	27,945	....	....	1	799	37	28,744
29. Condensing Units—15 Hp.	19	20,458	....	....	2	1,720	21	22,178
30. Condensing Units—20 Hp.	19	20,955	....	....	2	2,358	21	23,313
31. Condensing Units—25 Hp.	10	12,036	....	....	1	1,410	11	13,446
32. Condensing Units—30 Hp.	4	5,931	....	....	....	....	4	5,931
33. Condensing Units—40 Hp.	9	18,908	....	....	1	1,570	10	20,478
34. Condensing Units—50 Hp.	4	10,862	....	....	....	....	4	10,862
35. Total—Lines 18 to 34 Inclusive	5,321	670,807	156	19,530	1,124	134,954	6,601	825,291
36. Total—Lines 1, 2, 4, 6, 8, 10, 11, 12, 35	10,850	....	244	....	1,544	....	12,638	....
37. Commercial Evaporators (Not Reported Above)	2,343	84,559	183	4,351	525	16,693	3,051	105,603
38. Air-Conditioning Evaporators (Not Reported Above)	152	28,661	....	....	3	565	155	29,226
39. Total Commercial & Air Conditioning	....	$1,709,527	....	$38,160	....	$221,763	....	$1,969,450



IT'S a quick-cooling refrigerant, permits rapid production of "smooth" ice cream. It gives controlled low temperatures, easily and efficiently, so that ice cream can be held at proper cold before dispensing. That's why it's so widely used in ice cream and dairy cabinets. Recharge these units with the dependable Methyl Chloride—ARTIC—specified and used by leading manufacturers for over 16 years.

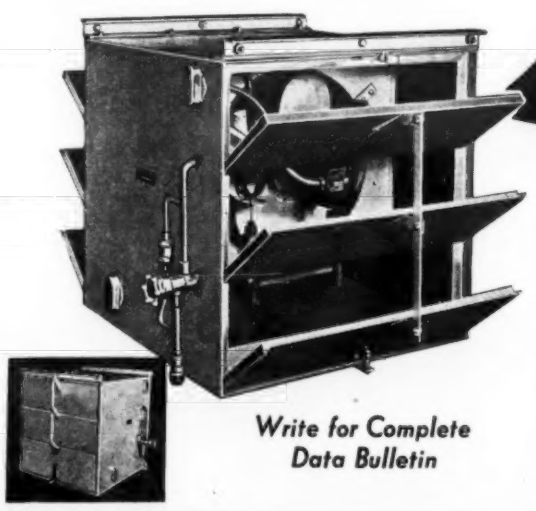
Stocked in principal cities in standard containers for prompt delivery. Send for "ARTIC Service News"—valuable servicing information, list of distribution points, etc.



DU PONT
REG. U.S. PAT. OFF.

E. I. DU PONT DE NEMOURS & COMPANY, INC.
The R. & H. Chemicals Dept., Wilmington, Del.
District Sales Offices: Baltimore, Boston, Charlotte, Chicago, Cleveland, Kansas City, Newark, New York, Philadelphia, Pittsburgh, San Francisco

ARTIC—*The preferred Methyl Chloride for service work*



Write for Complete Data Bulletin

"FREEZING-OVEN" by KRAMER

Ideal for Freezing Temperatures. Self Defrosting. Replaces Pipe Coils at lower initial cost per given ton.

Results: Greater Freezing Speed in Less Space. No complicated hook-up. No skilled help to defrost. Process takes only twenty minutes. Just close shutters, turn on electric heater switch, and the Unit is transformed into an insulated oven.

Specially designed insulated cabinet and shutters prevent any material change in the cooler temperature while defrosting.

The "Freezing Oven" is as simple to install as an ordinary Unit Cooler, requiring only additional wiring for the electrical heater.

APPLICATIONS:
Apple Storage. Ice Cream Storage Rooms. Ice Cream Hardening Rooms. Frozen Food Storage. Sharp Freezers. Locker Storage, or any other applications involving temperatures below 32°.

TRENTON AUTO RADIATOR WORKS, Trenton, N. J.

Distributor-Dealer Doings

Distributor's Sales Force Bags a Cup

Officials of Orkil Electric Co., Hartford, Conn., receive the silver trophy for surpassing all G-E home laundry equipment distributors in the recent "Triple Play" sales drive on washers and ironers. Left to right: E. J. Hennessey, supervisor of home laundry sales for Orkil; R. H. Roden, G-E home laundry specialist; J. V. White, G-E; Miss Margaret McCarthy, Orkil sales promotion manager; H. B. Day, G-E; O. P. Kilborn, Orkil president; A. G. Chaffer, G-E home laundry sales manager; David Hays, commercial engineer; and John M. Wicht, manager of G-E home laundry equipment section.

Storz Supply Is Omaha Norge Distributor

OMAHA, Neb.—Storz Supply Co., wholesaler of automotive equipment and household appliances since 1915, has been appointed Norge distributor in this territory, replacing the A. Y. McDonald Co. of Omaha.

Main office of the Storz organization is located here, but the firm has branches in Council Bluffs, Iowa, Grand Island, Neb., and Norfolk, Neb.

The company's Norge division will be operated entirely separately from its automotive department, under the direction of Ralph E. Dunn. Advertising and sales promotion will be handled by Truman Ball, and the service department will be managed by T. E. Peterson, formerly of Norge's Muskegon Heights, Mich. plant.

W. F. Protzman is vice president and general manager of the Storz Co.

Jersey Utility Promotes Stevens and Wright

NEWARK, N. J.—Charles A. Stevens has been promoted from the position of general sales representative on electric refrigeration to sales manager, electric, of the Public Service Electric & Gas Co., it has just been announced here. Mr. Stevens succeeds John L. Farrell who died Sept. 6, and in turn will be succeeded as general refrigeration sales representative by Donald K. Wright.

A graduate of New York university, Mr. Stevens became a cadet with Public Service in 1921, and upon completion of his course was assigned to electric refrigeration sales work in 1924. He is a resident of Westfield, N. J. Mr. Wright, who started with Public Service in 1927, after graduation from the University of Pennsylvania, had been serving as industrial representative, electric and gas, prior to his appointment to the new position.

Mr. Farrell had been sales manager of the electric division since Jan. 1, 1936, after an association with Public Service Corp. which started in 1903, when he became an office boy in the Paterson commercial office. He later served in various commercial office capacities, and was commercial manager of the Passaic office prior to his appointment as sales manager.

Reynolds Electric Enlarges Its Display Space

OXFORD, N. C.—Reynolds Electric Co., full-line Frigidaire dealer here, has enlarged its windows and greatly increased its interior display space. In addition, it has completely redecorated the store interior.

Stephen Maher Is Cooper General Sales Manager

CHICAGO—Stephen B. Maher, vice president in charge of apartment house sales for R. Cooper Jr., Inc., General Electric distributor for Illinois and northwestern Indiana, has been given the added position of general sales manager of the Cooper organization.

Mr. Maher, who has been with the company for eight years, was elected to his vice presidency post two years ago. He will continue in this position, in addition to undertaking the coordination of all sales department activities.

Well known in banking circles and property management groups for his close association with them in the electrical appliance end of remodernization work, Mr. Maher has in the last few years personally accounted for the sale of several thousand G-E refrigerators, thus substantiating his claim to the title of a "selling" sales manager.

Under Mr. Maher's direction, several new services were instituted in the company's apartment house division.

Window Banners Boost Trade-In Book Plan

PHILADELPHIA—Use of Herman Hantober's National Market Index or "Blue Book" for refrigerator trade-ins is being promoted here by large red-and-white window banners for use in stores appraising trade-ins according to Mr. Hantober's schedule.

N. Snellenburg & Co., local department store, recently inserted a large advertisement in a Sunday edition of the Philadelphia Inquirer calling attention to the fact that the store used Mr. Hantober's book in evaluating its trade-ins.

New Wands Quarters To Quadruple Space

NEW ORLEANS—Wands, Inc., electric refrigeration distributing and service company of this city, has signed a lease effective Oct. 1 on ground floor at 1070 St. Charles Ave. Now located several blocks away on the same street, the Wands company will have four times its present space in the new building. W. B. Wands is secretary and general manager of the firm.

Frigidaire Dealer Is Named In Dillon, S. C.

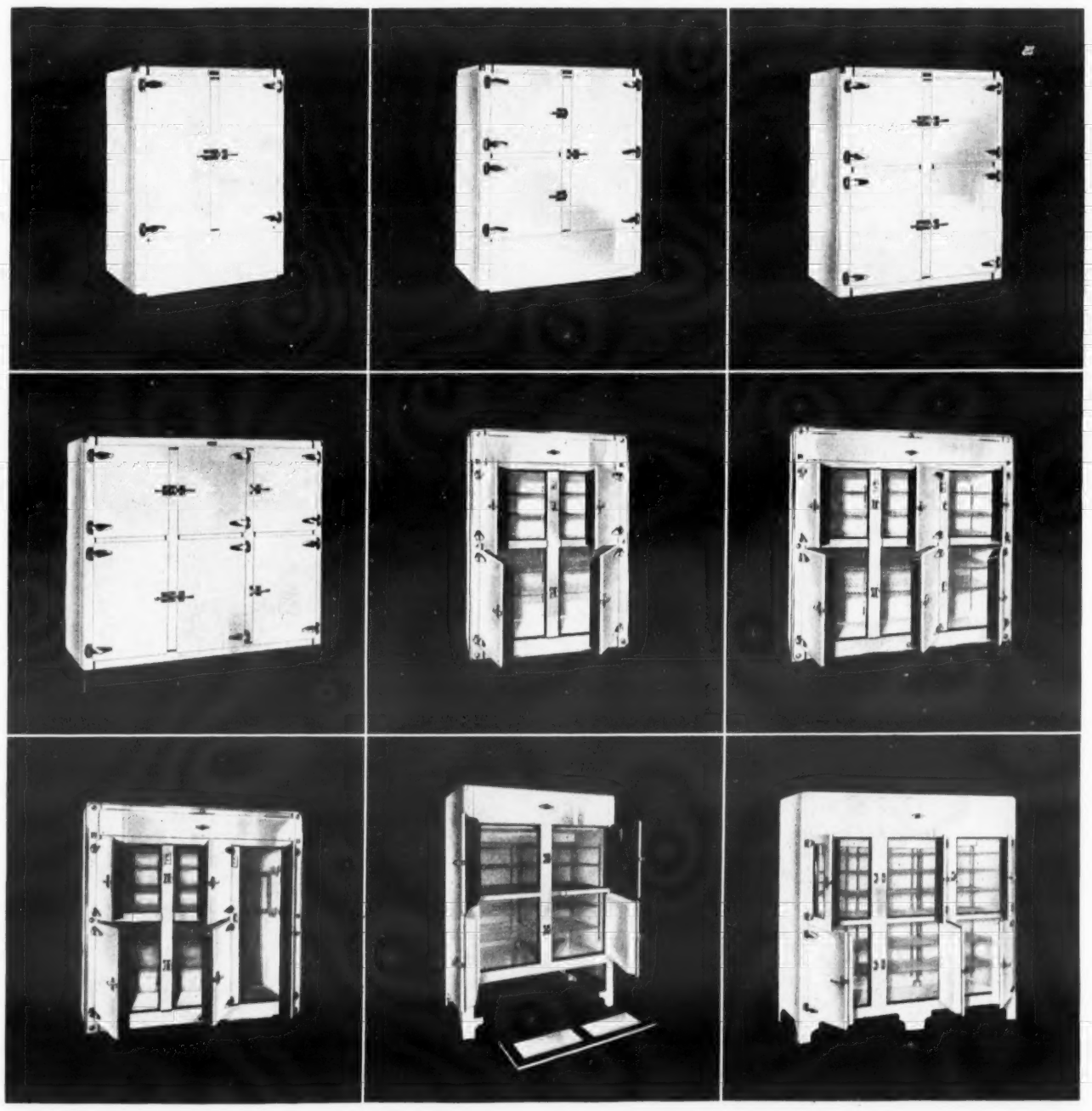
DILLON, S. C.—William Bros. Hardware Co. has taken on the complete line of Frigidaire appliances, according to T. A. Albright, dealer coordinator of Carolina Power & Light Co.'s southern division.

SEEGER MADE

COMMERCIAL CABINETS . . .

Dependability in construction and performance has made Seeger Refrigerators the choice of Hotels, Clubs, Restaurants and Institutions for two generations.

The Seeger line of Commercial Cabinets embraces the new air conditioned and self-contained models, as well as electric and ice models in a wide range of sizes for every modern refrigeration use.



Above are a few of the leaders illustrated in the new Seeger Commercial Cabinet Catalog just off the press. Phone, write or wire for your copy.

Seeger

SEEGER REFRIGERATOR CO.

SAINT PAUL, MINNESOTA

NEW YORK - BOSTON - PHILADELPHIA - CHICAGO - LOS ANGELES

Air Conditioning

319 Installations Made In N. Y. Through August

NEW YORK CITY—Air-conditioning systems installed or contracted for in the territory served by Consolidated Edison Co. of New York and associated companies during the first eight months of this year totaled 319, with a total connected load of 13,301.54 hp., according to a tabulation compiled by the utility company.

All but 13 of the installations were for use in commercial establishments, seven of these being of the residential type, and six in industrial applications.

By boroughs, installations for the first eight months of the year were divided as follows: Manhattan and the Bronx, 218, for 9,489.5 hp.; Brooklyn, 57 installations for 1,428.36 hp.; and Queens, 44 installations for 2,374.68 hp.

Restaurant installations were far in the lead in commercial jobs, with 115 in the three divisions, and retail stores were next, with a total of 62 installations. Eight installations in department stores also were reported.

A tabulation of installations in all boroughs for the first eight months of the year follows:

Restaurants	115
Retail Stores	62
Hotel Dining Rooms	10
Offices	21
Office Buildings	2
Theaters	33
Banks	11
Barber Shops	1
Beauty Parlors	1
Doctors' Offices	5
Funeral Parlors	3
Clubs	2
Dance Studios	2
Apartment House	1
Movie Studios	1
Opticians	2
Showrooms	7
Broadcasting Studios	2
World's Fair Exhibits	16
Residential	7
Industrial	6
Miscellaneous Commercial	1
Department Stores	8

Wood Odors Recovered By Air-Conditioning System

MEMPHIS, Tenn.—Discovery that pungent odors imprisoned in wood such as pine, cypress, sandalwood, and balsam may be recovered through an air-conditioning system long after their fragrance has been dried out was made accidentally in the air-conditioned cypress walled office of the W. F. Slater Engineering Co. here recently.

After a portable air conditioner was installed, Mr. Slater noticed a pleasant aroma from the cypress boards while the conditioner was operating. When the conditioner was turned off, the odor diminished.

Giant Air-Conditioned 'Igloo' To Be Carrier Exhibit at N. Y. Fair

NEW YORK CITY — A giant Eskimo igloo, higher than a five-story building, with "snow" encrusted walls and "Northern Lights" playing from its ceiling, will be built by Carrier Corp. to house the company's exhibit at the New York World's Fair of 1939, according to an announcement by L. R. Boulware, Carrier's general manager.

Announcement of the nature of the exhibit was made coincidentally with presentation of the building's plans to Grover Whalen, Fair president, at the exhibition's administration building at Flushing, N. Y. Present at this ceremony, in addition to Mr. Boulware and Mr. Whalen, were Carrier President J. I. Lyle, and Willis H. Carrier, chairman of the board.

The igloo, according to Mr. Boulware, will be 70 feet high and will be covered with white stucco with a special crystal finish to simulate snow. Surrounding the building will be pools which at night will reflect the floodlights playing upon the igloo's exterior. The door of the building will simulate that of a real Eskimo house.

Seats will be placed within this dome-shaped structure so that visitors may rest and watch a travelogue of air conditioning around the world, which will be flashed upon the igloo's walls.

Connected to this exhibit by a glass-walled arcade will be an oblong building with a complete glass front and glass sides. Total floor space of the two buildings will approximate 10,000 sq. ft.

Purpose of the exhibit, Mr. Boulware explained, will be to take visitors behind the scenes of air conditioning and show them how the industry has developed in the 37 years since Mr. Carrier made the world's first air-conditioning installation in a Brooklyn lithography plant.

A giant revolving globe will show graphically how air conditioning is being used throughout the world from an office 1,000 feet above street level to a mine.

Practicing what it preaches, Carrier plans to condition the exhibit with one of the largest type systems ever used for public exhibition. Inner workings of this unit will be visible through a glass casing, a 200-ton Carrier centrifugal compressor being displayed in this way.

The display building will contain operating exhibits of all types of Carrier equipment, and all phases of air-conditioning operation will be explained.

Equitable Building System Adapted To Various Businesses

DES MOINES, Iowa—An example of the application of a central-station refrigeration system to a number of different air-conditioning problems is found in the Equitable building here.

Two water-vapor centrifugal compressors, having a capacity of 350 tons and 150 tons, respectively, supply chilled water which is piped to five separate air-cooling systems in the building.

The refrigeration machine room is located on the second floor of that section of the building which is only two stories high. Equipment used in refrigeration includes the two compressors, shell-and-tube condensers, chilled water recirculating pumps, economizer tank, condenser water circulating pumps, starting equipment, and a forced-draft cooling tower, mounted on the roof just above the machine room.

WATER-VAPOR SYSTEM

In the centrifugal water-vapor system, water is passed to a tank where a portion of it is vaporized by placing it under vacuum. This process of evaporation cools the balance of the water, which is circulated to the air-conditioning equipment.

The water vapor is then passed to a shell-and-tube cooler, where it is condensed and passed back to the system. The water in the shell-and-tube condenser is then directed to a cooling tower, where it is recooled to be used again in the condenser. Water is the only refrigerant used.

Two air-conditioning units, located in the machine room, provide summer air conditioning for the first and second floor offices of the Des Moines Gas & Electric Co. offices and stores.

Eight Trane air-conditioning units are used to provide conditioned air for the balance of the first and second floors, and basement of the building. Two units supply conditioned air to the basement and first floor shop of the Joseph Jewelry Co. Other units supply cool air for King's drug store and the Patterson dental laboratory.

SERVES VARIOUS BUSINESSES

Conditioned air is provided for the Equitable Co. Printing Shop, where a close control of humidity is necessary. Paper stocks, because they are hygroscopic, differ in size when humidity varies. Such changes are capable of throwing register off color and black ink off as much as 5%, thus making fine printing blotchy. Air conditioning is the accepted answer to this problem.

Flowers sold in the Braucht floral shop on the first floor of the Equitable Building are protected during hot weather by the air-conditioning system, which is powered from the central refrigeration system.

For air conditioning offices above the third floor of the building, air-cooling units are located on alternate floors, in rooms adjoining the elevators. These rooms are approximately 8 feet x 23 feet.

The built-up units for the third to sixteenth floors are so arranged that outside air is mixed with recirculated air from both floors. The control system calls for 100% outside air when outside conditions are suitable.

COMMON FILTER

All air used is passed over a common filter. Then the air is divided, half going through coils which serve the floor on which the equipment is located, and the other half through coils which serve the floor below. Centrifugal fans and secondary filters are supplied for each bank of coils.

Thus, each conditioning unit contains twin fans and coils, all supplied from a common air source. The entire system delivers 320,000 c.f.m. of conditioned air to the building, the equipment taking up only .84% of the rentable area.

The system was designed and installed under the supervision of John K. Dunn, chief engineer of Air Conditioning Corp. here.

E. H. Borg of the firm of Proudfoot, Rawson, Brooks & Borg, architects, acted as consulting engineer for the building owners.

Air-Conditioning Orders Booked In July Totaled $3,236,770, U. S. Reports

Item	Value of Orders Booked July, 1938	July, 1937	Jan.-July, 1938
Total	**$3,236,770**	**$5,570,089**	**$25,334,513**
Air Conditioning Group—Total	**1,485,638**	**2,762,324**	**13,982,433**
Unit Systems—			
Self-contained (shipped substantially complete)	495,091	495,691	4,217,113
Not self-contained (shipped in sections), including refrigerating or cooling medium	428,438	987,105	3,421,009
Central-station Systems, excluding installation if installed (including refrigerating or cooling medium sold separately or otherwise for air conditioning)*			
Human comfort	269,433	781,112	4,045,399
Industrial	41,698	23,590	383,835
Refrigerating or cooling medium sold to contractors or other distributing outlets (not manufacturing air-conditioning equipment) for air-conditioning systems, when such knowledge as to the application is available	95,487	301,481	925,442
Air washers, including pumps and motors and control where furnished	37,460	66,537	304,420
Air filters, not including sales of filters used with machinery other than fans	35,937	37,185	203,821
Humidifiers	80,094	69,623	481,399
Fan Group—Total	**$1,276,202**	**$1,988,944**	**$ 7,533,918**
Fans, including bearings, pulleys, or couplings (if furnished)—			
For public and semi-public buildings	99,476	138,423	1,138,058
For general industrial uses	274,445	563,831	1,752,208
For mechanical draft	136,018	248,349	601,789
For jobbers stocks and unknown uses	136,260	163,359	700,527
Small housed and propeller fans—			
Direct connected small housed blowers with motors and control (merchandise motors)	145,108	196,997	874,906
Propeller fans, direct connected and belted (for ventilation only)	343,898	579,255	1,782,188
Driving mechanism for general fan use, not reported above (manufactured or jobbed)—			
Electric motors and controllers	68,862	90,032	548,983
Steam engines and turbines	72,135	8,698	135,259
Unit Heater Group—Total	**$ 476,930**	**$ 818,821**	**$ 3,818,157**
Industrial type unit heaters, including heating element and motors where furnished—			
Equipped with blower-type (centrifugal) fans	46,604	134,235	457,106
Equipped with propeller-type fans	206,968	242,690	1,424,732
Schoolroom type unit heaters, including heating element and motors and control where furnished	67,812	212,752	1,016,616
Indirect heating surface, not including unit heater surface (manufactured or jobbed)—			
Steel pipe coil type	1,573	626	9,968
Cast iron type	13,602	12,332	55,018
Copper or aluminum type	140,371	216,186	854,717

*Includes incidental equipment, such as temperature, motor, humidity, and electrical controls, dampers, outlets, etc., as are sold with each.

Self-Contained Coolers Show Up Well In Sales Report By Census Bureau

WASHINGTON, D. C.—Orders for air-conditioning systems and equipment booked by 125 U. S. manufacturers during July totaled $3,236,770, according to figures compiled by Director William L. Austin of the Bureau of the Census, Department of Commerce.

This compares with a total of $3,759,264 in orders booked during June of this year, and with $5,570,089 booked in July of last year.

Orders for air-conditioning equipment only during the month amounted to $1,483,638, as compared with $1,947,991 in June and $2,762,324 in July of 1937, the report shows.

Self-contained unit conditioner orders amounted to $495,091 during the month, a close match to the $495,691 reported for the similar month last year. June orders in this classification were $660,351. Air washer orders amounted to $37,460 this July, compared with a June total of $39,566 and a July, 1937 total of $66,537.

Industrial-type central-station systems, air filters, and humidifiers, were the only items of equipment to exceed their marks for the previous months. Orders for air filters totaled $35,937, as compared with $34,951 in June; and humidifier orders amounted to $80,094 in July, after a June total of $72,137. Central-station systems of the industrial type had orders totaling $41,698, compared with $35,200 in June.

Central-station systems of the human-comfort type were far below their previous totals for both the comparative month of 1937 and the preceding month this year, the orders totaling $269,433 this July, against $509,547 in June and $781,112 in July last year.

Merryweather To Sell Man-Made Weather

AKRON, Ohio—The Merryweather Co., Main and Furnace Sts., has been appointed distributor of Airtemp air-conditioning equipment in this territory.

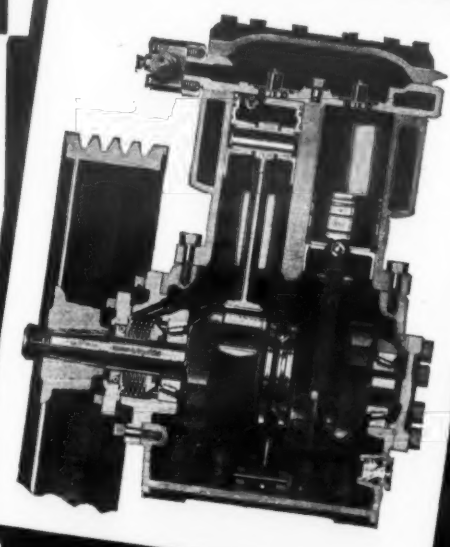
Another Example of CURTIS' Advanced Engineering Features

Only CURTIS Gives You ALL These Advanced Engineering Features—Assuring Economy, Efficiency and Long Life

1. Timken Tapered Roller Bearings
2. "Centro-Ring" Positive
3. Quick, Easy Valve Inspection
4. Drop Forged Crankshaft and Connecting Rods
5. Cleanable, Shell and Copper Tube Models
6. Balanced Bellows Seal Assembly
7. Patented Oil Retainer Insuring Long Seal Life
8. Split Connecting Rod with Clamp Lock or Pin
9. Water Jacketed Cylinders
10. Removable, Interchangeable Cylinders
11. Stainless Steel, Disc Type Valves with Safety Feature
12. Doubly Protected, Smooth Operating Flywheel
13. Extra Large Condensers and Receivers

Engineering refinements and highest manufacturing standards are responsible for the Curtis record of economical, efficient, trouble-free performance—proven in thousands of installations. There's a Curtis compressor and condensing unit to meet every air conditioning requirement—from 1/6 to 30 H.P.

It will pay you to investigate the complete Curtis line—write today for full information.



CURTIS

"Builders of Condensing Units Since 1922"

CURTIS REFRIGERATING MACHINE CO.
Division of Curtis Manufacturing Co.
1912 KIENLEN AVENUE ST. LOUIS, MO.

—for every air conditioning and refrigeration requirement.

Anaconda Copper Refrigeration Tubes

Unusually soft!

THE AMERICAN BRASS CO
FRENCH SMALL TUBE BRANCH
General Offices: Waterbury, Conn.

KEROTEST

Valves and Fittings

The Standard of the Industry

Kerotest Manufacturing Co.
Pittsburgh, Pa.

Commercial Refrigeration

Cold Candy Bars Sell Like the Proverbial Hotcakes

This refrigerated display case in the Luhring News Co. headquarters in Evansville, Ind. is used exclusively for the storage and display of candy bars, the proprietor having found that customers have a great preference for cold candy bars. Lucille Luhring, daughter of the owner, presides over the candy case.

• • •

Evansville Storekeeper Finds Candy Lovers Will Walk Nearly a Mile For a Cold Chocolate Bar

EVANSVILLE, Ind.—The value of refrigerated display cases in meat merchandising and more recently in the sale of fresh vegetables has been proven repeatedly, but it remained for Fred Luhring, of the Luhring News Co., to adapt the plan to sale of candy bars.

So profitable has been the installation, costing approximately $500, that Mr. Luhring declares he would not part with his case for twice its cost if it were not possible to obtain another.

"It would surprise you how many blocks farther people will walk to get a cold candy bar," said Mr. Luhring. "My only regret is not having the case years ago, for once a customer gets a tasty refrigerated candy bar he is satisfied with none other."

Mr. Luhring, noticing investments made by food stores in expensive cases that attractively displayed their products, thought over the idea of adapting the plan to candy bars for some time before calling in C. E. Walker, refrigeration engineer with the J. A. Brucken Co., to survey his store and recommend the case best fitted for the purpose.

The case chosen was a standard three-shelf 8-foot delicatessen case, Model H8X of the Tyler Fixture Corp. It was installed near the entrance at the front of the store and equipped with a model Ma1AH ¼-hp. Mills condensing unit, which was housed in an ordinary background using a grille on the end and a metal cane front on the door.

Experiment showed that a 50° F. temperature kept the candy in a perfect condition and permitted economical operation of the installation. A thermometer is prominately displayed to inform customers and prospective customers of the temperature within the case.

The installation was made by Charles Van Stone, refrigeration service engineer who contracts the installations of the Brucken Co.

J. A. Brucken heads the Brucken Co., having served the tri-state area of Indiana, Illinois, and Kentucky with store and cafe equipment for 25 years. Tyler and McCray refrigerated cases are distributed by the company.

Williams To Produce Beverage Cooler

(Concluded from Page 1, Column 5)

is built to be radio-interference proof.

Capacity of the Serv-O-Matic is 39 bottles ready for dispensing and 40 bottles ready for pre-cooling. No part of the mechanism is in water, it is claimed. Temperature is kept below 40° F.

The Serv-O-Matic is readily demountable for cleaning. There is a lock on the coin box and another lock on the dispenser top. Slug ejection is provided by a mechanism which subjects every coin inserted to six different tests, including spring, magnetic, and resiliency.

This equipment can be used to convert standard sized Coca-Cola coolers into self-service units. Dispenser mechanism is listed at $60 and refrigerating equipment at $55, installed.

Williams Ice-O-Matic refrigeration in a "packaged" unit also is available for converting standard and master ice-type bottled beverage coolers into self-contained electrically refrigerated cabinets.

Equipment used in converting a standard-sized cooler into an automatic coin-controlled, electrically refrigerated unit consists of Williams Serv-O-Matic, Ice-O-Matic compressor, stand pipe, compressor compartment cover, cooling coil, bottle rack, and controls.

Seeger Catalog Affords Complete Line Data

ST. PAUL—Seeger Refrigerator Co. has just issued a complete catalog describing and illustrating its lines of standard commercial cabinets, "air-conditioned" commercial cabinets, and display cases. Supplementing the individual specification sheets formerly issued, the catalog arrangement is designed to enable salesmen to give prospects a picture of the complete Seeger line of cabinets.

Shown in the 20-page catalog are nine models of standard commercial cabinets, six models of the "air-conditioned" cabinets, and four series of display cases, two single-duty and two double-duty types.

Additional loose-leaf sheets or complete catalogs may be obtained from the company.

Locker Plant Opened In Wisconsin Village

CEDARBURG, Wis. — Ozaukee Frozen Foods Co. celebrated the formal opening of its quick freeze locker plant located in the Bruss store building here, Sept. 2 and 3.

Lockers, having a capacity of approximately 250 lbs., are being rented at $10 and $12 a year, depending upon their location in the plant.

New Bottle Beverage Cooler and a Direct-Flow Beer Cooler Are Introduced By General Electric

(Concluded from Page 1, Column 4)

new model can be used for all types of bottled beverages.

It has six bins, providing a total normal storage capacity of 20 cases of 12-ounce bottles, and a maximum capacity of 24 cases. The cooler is equipped with a G-E "Scotch Giant" condensing unit. A ½-hp. refrigerating unit is available if desired.

Standard model weighs 925 lbs., is 105 inches wide, 42 inches high, and 30 inches deep. It is of flat-top design. Top, 12 inches deep, extends the full width of the cooler, providing almost 9 sq. ft. of extra counter surface which can be used for service purposes or for displays.

All-steel cabinet has a two-coat bronze lacquer finish over a baked-on primer, and is insulated with 3 inches of felted rock wool Cooler is provided with G-E finned cooling units of tinned copper tubing with aluminum fins. Each storage bin has wood racks, and partitions are of heavily galvanized steel and are removable. Wire screens protect coils from damage by bottles.

The direct-flow beer dispensing system may be installed in an existing bar, without alterations, or it may be employed without a bar, since it is of attractive, modern design.

Cabinet is made of heavy-gauge, rust resisting galvaneal steel, with a two-coat finish of Cromwell green baked-on enamel. Its appearance is enhanced by stainless steel decorative trim bars and bar tray drain. Insulation is 2 inches of corkboard, sealed against moisture.

New system is available either as a complete packaged unit, with a self-contained refrigerating machine installed in the cabinet, or with remote installation. Both types are available in two and three-tap models. Beer may be tapped in the basement or under the bar.

In operation, beer from the keg is transferred to a silver-plated cooling cylinder for partial cooling. From this cylinder it is transferred again, without agitation, through a silver-lined tube to a second cylinder, for further cooling. Each cylinder has a capacity of 1¼ gallons of beer. Two cylinders are connected to a single faucet, so that 2½ gallons of beer are carried in reserve behind each faucet.

Water bath, with temperature at 36 to 38° F., completely surrounds each beer cylinder. Beer is drawn from the bottom of the cylinder, which is also the coldest point. Quick-acting chrome-plated flow control faucet gives fast service with minimum waste, it is claimed. Unrefrigerated portion of the restricted flow draft tube and faucet holds less than a half ounce of beer.

Two-tap model for remote installation of compressor weighs 175 lbs. and is 25 inches wide, 19 inches deep, and 30 inches high. Three-tap model is 7 inches wider, and weighs 220 lbs. Two-tap self-contained model weighs 305 lbs. and is 44 inches wide, and three-tap model weighs 350 lbs. and is 6 inches wider. Height and depth are the same for all models.

The new food storage refrigerator, designated as model HL-20, has a G-E top fin-cooling unit designed to occupy minimum space in the cabinet, and a "Scotch Giant" condensing unit installed in the bottom compartment, ready for plug-in operation.

Shelf area of the refrigerator is 27.2 sq. ft., and it has a capacity of more than 20 cu. ft. Weighing 620 lbs., it is 66½ inches high, 44⅜ inches wide, and 31¼ inches deep. Finish is in white Dulux, with modern styling.

Other features include heavily tinned steel wire shelves with adjustable shelf supports; all-steel interior and exterior construction; acid-resisting porcelain finish on the bottom of the food storage compartment; 3 inches of rock wool insulation in the doors and cabinet walls, and heavy chrome-plated brass hardware.

Hardy Announces Plans For 2 New Units

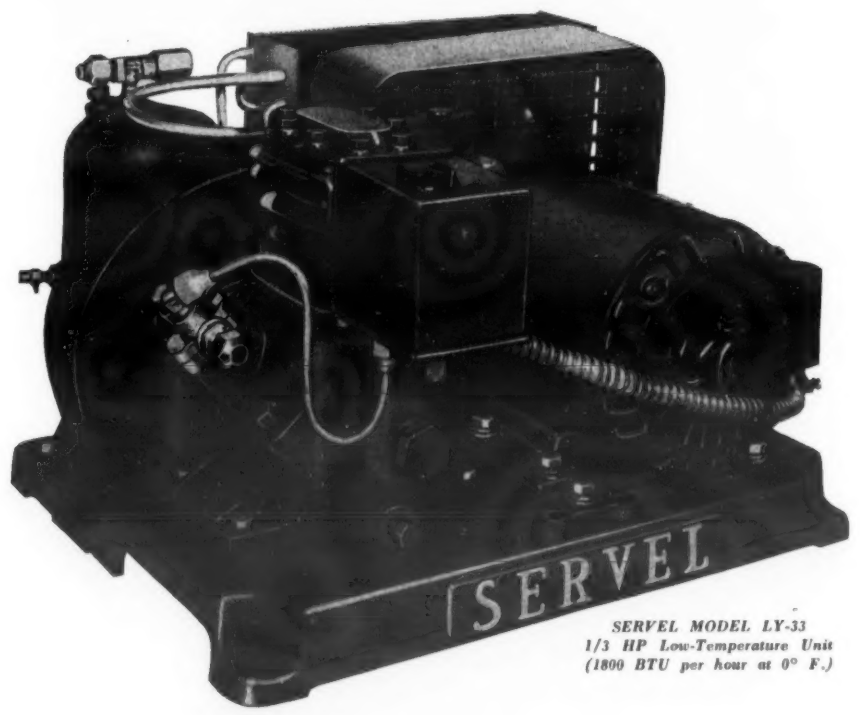
DAYTON, Ohio—Hardy Mfg. Co., Inc., manufacturer of Mayflower commercial refrigeration units, plans to introduce two new models early in 1939, one a ⅓-hp. unit, the other a ⅛-hp. unit, H. H. Hardy, president and general manager, announced recently.

Prospects for 1939 are bright, Mr. Hardy said, judging from reports received from the field, and he expects a pick-up in air-conditioning sales with the anticipated building revival.

Announcing . . .

NEW UNITS *for* ICE CREAM

***and* Other Low-Temperature Uses**



SERVEL MODEL LY-33
1/3 HP Low-Temperature Unit
(1800 BTU per hour at 0° F.)

Servel now offers a full line of refrigerating machines designed especially for ice cream, frosted food and other work in the low-temperature brackets.

The models range from 1/4 HP to 2 HP, including types for self-contained fixtures and for remote installations. The 1/2-ton to 1-ton units are available as extremely compact models with water-cooled condensers for use in large low-temperature fixtures. All models are attractively priced.

New uses are constantly demanding *lower* temperature. You can meet this demand with RELIABLE, EFFICIENT, FULL-CAPACITY Servel units, *and* reduce your maintenance costs.

Write today for full specifications and details. Engineering assistance will be gladly furnished on request.

SERVEL, Inc.

ELECTRIC REFRIGERATION AND AIR CONDITIONING DIVISION

Evansville, Indiana

AIR CONDITIONING & REFRIGERATION NEWS

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Too Many Lines Hurt Department Store Profits

TROUBLES of the department stores and their highly publicized failure to show profits on household refrigeration sales continue to occupy the thinking of many of the best merchandising minds in the refrigeration industry. One angle of this dilemma that has been consistently overlooked is the well-nigh universal practice among department store appliance divisions of stocking half a dozen different brands of refrigerators.

Appliance managers wail that they don't get preferential treatment from manufacturers and distributors, despite their high sales volume. But to each individual distributor, that *total* volume is meaningless. All they're interested in is how many refrigerators *of their make* the department store sells. When split up among several brands, the high total figures are reduced to ordinary or even less-than-average sales for each make.

'Small' Dealer May Sell More Units of One Brand

Thus it happens that the distributor doesn't get too excited when the department store claims some "small" dealer is undercutting its prices. That dealer may be a better customer than the department store.

By having a number of different lines on the floor, department store buyers figure that they don't have to worry about competition taking sales away from them on regular customers. Actually, this multiplicity of lines increases the opportunity for competitive dealers to proselyte their customers. Every time the department store takes on another line, it adds a new flock of dealers to the competitors it already has.

If a department store appliance buyer would take only one line, and keep it for a period of years, he could identify that brand with the store's name, just as Coldspot is identified with the name of Sears Roebuck. An identification of that sort would be worth considerable to a manufacturer; he could then afford to make concessions and do the sort of dealer policing department stores are demanding.

If Concentrated on One Line, Would Be Big Dealer

The department store then would definitely become a big dealer for that line. That, in addition to the value of the advertising gained through the hook-up of the store's name with the manufacturer's name, would give the appliance buyer real bargaining power.

As matters stand now, manufacturers are inclined to gloss over the complaints of department stores that they can't run their refrigerator divisions at a profit.

Manufacturers point out:

(1) That the high dollar volume of refrigerator sales makes a substantial contribution to the management fund—a contribution that the management would hate to give up.

(2) That the steady stream of refrigerator owners who come regularly into the store to make their monthly payments represents a valuable flow of floor traffic to the department stores — traffic which, because it represents families of some means and good credit rating, is worth real money to the stores.

(3) That department stores which do their own installation and servicing generally show a profit on their refrigeration business. The loss figure on most department store operations usually runs less than 5%; and 5% is the figure charged by the distributor for handling installation and service. When the store does its own service, standard department store bookkeeping practice (oddly enough) doesn't charge this against the refrigeration operation. The longer discount thus obtained usually results in the department showing a small profit.

Department Stores Seek To Eliminate Distributor

What the department stores are really after, of course, is elimination of the distributor from their picture. If they could only buy direct from the manufacturer, they reason, they could cut prices at will and still have enough margin left to show a profit.

The reputable manufacturer, of course, is in no position to by-pass the distributor. He depends on the distributor for continuity of service. A dealer may sell his line one year, drop it the next. But with five-year warranties in force, continuity of service must be assured. The distributor provides that insurance.

One can't sell direct to some dealers and not to others—and still keep a good distributor—so the manufacturer who intends to keep his name in good repute for a long, long time cannot afford to eliminate the distributor from his distributive organization.

A sliding scale of discounts based on volume of business done, however, is an accepted practice in the specialty selling field. And by concentrating their attentions on one line—plus giving it continuity over a period of years—the department stores will find themselves in a bargaining position against which they might find difficulty in lodging a legitimate complaint.

They'll Do It Every Time . . . By Jimmy Hatlo

READUM & WEEP
STEVE READUM
RAY WEEP
RAY, WE SIMPLY HAVE TO FIRE MISS TWIRP. SHE'S NO BOOK-KEEPER. SHE CAN'T EVEN ADD. BESIDES, THAT SILLY CACKLE OF HERS IS DRIVING ME DAFFY. BUT YOU DO IT, RAY. YOU DO IT. YOU'RE SO MUCH MORE DIPLOMATIC THAN I AM.
I DIDN'T THINK SHE WAS AS BAD AS ALL THAT. BUT IF YOU INSIST, STEVE, I GUESS I'LL HAVE TO FIRE HER.
MISS TWIRP, I DON'T KNOW WHY MY PARTNER DID THIS. HE'S VERY ECCENTRIC AT TIMES. BUT I, FOR ONE, AM VERY SORRY TO SEE YOU LEAVE US. I SHALL MISS YOUR WARM SMILE AND THE SUNSHINE OF YOUR LAUGH AS LONG AS I LIVE. IF EVER YOU NEED REFERENCES - JUST MENTION MY NAME.
THANX TO RAMON GUIDO, NEW YORK

LETTERS

An Alaskan Schoolm'am Paints a Picture

Stuyahok, Alaska

Editor:

Yes, Alaska has been called "Seward's Ice Box" and "Seward's Folly," and even yet some textbooks say:

"Very little is known about Alaska. Its rivers and lakes are frozen over the year around."

An Eskimo girl in my geography class, after reading that, said:

"If man what write that not know any more about other countries than he does Alaska I guess it all lies."

She was more than half right for here in the north where the sun does not set for several weeks during the summer and the temperature soars to 85 and 90° F. it means fresh meat and some canned meats will spoil.

Unless you have lived in the north you cannot realize how desperate becomes the question of fresh meats.

Mining camps have opened up all over the territory and in most of them 25 to 30 or more men are all putting in long hours of the hardest of work and must have meat.

A very few camps have installed refrigeration plants. A few villages widely separated have cold storage and upon these villages depends the supply of these camps.

To pay the Alaska retail price for meat, then add to that expensive plane transportation and also the fact that it will keep only a few days makes it almost prohibitive, for plane transportation is still classed as luxury.

Twice a month this camp gets meat by plane from Bethel, Alaska. As we have no pontoon landing here, the plane (a pontoon ship) circles the camp and drops the burlap wrapped packages onto the mossy tundra near the cook shack.

Last meat day he dropped five such packages. Four were easily found, but the fifth had the whole camp guessing. So precious was that front quarter of beef that the man who finally found it was quickly handed $10.00.

A few camps (very few) can obtain fresh reindeer meat which helps some, but the reindeer industry has been a political football for so long with herds neglected and allowed to roam at will and the Eskimo, except in very rare cases, has not been taught how to butcher a deer. This leaves cold storage meat the only recourse for the mining camps.

If these various concerns could be shown that a refrigeration plant could be purchased at a reasonable cost and reliably operated without importing a special graduate to handle it, I feel sure many of them would have their own and ship a season's supply of meat at one time.

The government boat which operates on the lower Yukon has cold storage facilities, but its arrival at the landing nine miles away is often uncertain, and to send a caterpillar down to meet the boat each time when it is needed elsewhere, is not to be considered.

Perhaps some salesman has already tried his luck, but just in case he hasn't, let me suggest a day in mid-July with mosquitos, weather hot, butter like oil, third or fourth day on a baked ham menu, and present a dependable, fool-proof refrigeration plant and presto! he'll make a sale.

Or better still he can obtain the winter addresses of most of the mine owners from Juneau and go see them at their homes during the winter months. Many of them live in Anchorage, some in Fairbanks, and many in Seattle.

Sorry I am not a man or I should be asking for agency rights in Alaska for I believe I could convince most of them of the saving, the dependability of the machine, and best of all the contentment of the crew by having the food they need most—fresh meat.

INEZ E. MOORE

P.S. Your address from Readers Digest.

Will you please send me literature of your refrigeration machines.

How To Obtain Industry Statistics & Market Data

Mullins Mfg. Corp.
General Sales Offices
Warren, Ohio

Editor:

I would like to purchase your latest edition of Refrigeration and Air Conditioning Market Data. The last copy I have is Volume 2 dated 1935.

If you have a recent issue of this same book, please send it to me promptly along with your invoice.

W. B. CLARK, Sales Mgr.,
Refrigeration Div.

Johnson Motors
Div. of Outboard Marine & Mfg. Co.
Waukegan, Ill.

Editor:

We have at present a 1934 Refrigeration Directory and Market Data Book published and copyrighted by your firm. We would like to have you send us your 1938 edition by return mail.

A. J. LOCKWOOD,
Purchasing Agent

RCA Mfg. Co., Inc.
RCA Victor Division
Camden, N. J.

Editor:

Would appreciate receiving the published United States domestic sales figures, on electric refrigerators for as many years past as you have records available. If you have the world domestic sales figures would like to obtain these also.

VANCE C. WOODCOX

Answer: All available information on refrigeration industry sales and market data for all years through 1934 is published in the 1935 Refrigeration and Air Conditioning Market Data Book.

Statistical information on the refrigeration industry which has been collected and published since that time in the weekly issues of AIR CONDITIONING & REFRIGERATION NEWS has been reprinted and put in a folder-file.

Copies of the 1935 Refrigeration and Air Conditioning Market Data Book are still available at a cost of $1.50 per copy, and those who purchase the book now will be given the folder-file, bringing many of the sales statistics up to date, at no additional charge.

Those who already have the book may obtain the reprint file (printed on sheets size 8½ x 11 inches) by sending 50 cents.

Found Berle Report Very Stimulating

676 Shatto Place No. 207
Los Angeles, Calif.

Sirs:

Please send me a copy of your recent issue in which a report written by A. A. Berle, Undersecretary of State, was published. I am enclosing 24 cents in stamps.

I had read the article and intended passing it on to my friends, but unfortunately lost my copy.

You are to be congratulated upon publishing such a long report in full. If widely read, this report should induce more intensive thinking and provoke more discussion than anything published in a long time.

HENRY C. TUNELL

Omaha Council Finds Code Data Helpful

Nebraska Power Co.
Omaha, Neb.

Editor:

The next meeting of the Omaha Air Conditicning Council is to be held next Friday. On that occasion we expect to discuss the proposed refrigeration and air-conditioning ordinance for the city of Omaha.

The article published in the Sept. 7 issue of AIR CONDITIONING & REFRIGERATION NEWS regarding the proposed code for the city of Detroit, was very good.

Several members of our Council have commented on this article, and requested that it be discussed at our meeting next Friday.

W. R. WHITE,
Secretary,
Omaha Air-Conditioning Council

See 'Redbook' as Being 'Indispensable'

2457 N. 31st St.
Philadelphia, Pa.

Sirs:

I want to thank you for the "Red Book." While the project is not a complete one (as stated in your message) nevertheless the idea is an excellent one and when it reaches the point you originally planned, of which I have no doubts you will, then it will be an indispensable aid to the service man.

You certainly have my wholehearted approval for your good work.

HARRY GERSTEIN

252 Howe Ave.
Passaic, N. J.

Sirs:

Thank you for the copy of the Red Book, which I received a short time ago. I think it would be of great help to any service man or service organization. So if it is possible to go ahead with this work, I think it will be appreciated by everyone having occasion to use it.

MICHAEL BOYKO

Jobber Activities

They Supply Parts In the Far West

Some members of the new Pacific Coast Jobbers Association were discussing the analysis of the jobber's place in the air-conditioning industry, published in the Aug. 24 News, when this picture was taken. Seated, left to right, are: Walter Schroeder, Pacific Metals Co.; Clarence F. (Sandy) Pratt and Jess E. Rauch, California Refrigerator Co.; Robert Hinshaw, Hinshaw Supply Co. Standing, left to right: L. P. Roth, Refrigeration Service, Inc.; Byron Waters, Pacific Metals Co.; Pete Askew, Refrigeration Supplies Distributor, Inc.; Frank Gillett, Frank Gillett Co.; and Lem V. Branson, California Refrigerator Co.

West Coast Jobbers Form Own Association

(Concluded from Page 1, Column 5)

Seattle and Portland, Ore., second vice president; Clarence F. (Sandy) Pratt of California Refrigerator Co., San Francisco, secretary; and Byron Waters of Pacific Metals Co., Los Angeles and San Francisco, treasurer.

The west coast association will work in conjunction with the National Refrigeration Supply Jobbers Association, whose headquarters are in Chicago. Object of the organization is to encourage, promote, and serve the industry in the west.

Next meeting of the group will be held Dec. 10 at the Whitcomb hotel, and the first annual meeting is scheduled for the Stevens hotel, Chicago, on Jan. 17, 1939, at the time of the All-Industry Exhibition.

In addition to the officers named, other representatives of the west coast jobbing industry who attended the organization meeting included: L. P. Roth of Refrigeration Service, Inc., Los Angeles; Walter Schroeder of Pacific Metals Co.; Frank Gillett of Frank Gillett Co., Los Angeles; and Jess E. Rauch and Lem V. Branson of California Refrigerator Co.

Austin Jones Takes on Electrimatic; Now Handles 9 Lines

OMAHA, Neb.—Austin Jones, representative of several refrigeration and air-conditioning supply manufacturers in a five-state territory comprised of Nebraska, Iowa, Minnesota, and the Dakotas, has been appointed representative in this same territory for Electrimatic Corp., Chicago manufacturer of valves, regulators, strainers, and similar equipment.

Other refrigeration and air-conditioning supply firms represented by Mr. Jones include: Chicago Metal Hose Corp., Maywood, Ill.; Clendenin Bros., Baltimore; Marshalltown Mfg. Co., Marshalltown, Iowa; Motor Equipment Co., Wichita, Kan.; Osotite Co., New York City; Rotary Seal Co., Chicago; United Wire & Supply Corp., Providence, R. I.; Virginia Smelting Co., W. Norfolk, Va.

In his capacity as manufacturers' representative, Mr. Jones contacts dealers, distributors, and independent service organizations, selling them on the manufacturers' goods and suggesting that they make their purchases through the nearest jobber stocking the items in question.

In this way he assists the jobber in selling the manufacturers' merchandise, and also gives the manufacturers direct contact with the actual users of their products as well as with the refrigeration and air-conditioning jobbers who stock them. In addition, Mr. Jones calls on various manufacturers of refrigeration and air-conditioning units who might incorporate in their products some of the merchandise sold by the various companies which he represents.

Mr. Jones started out in this territory in his present capacity in 1934, and claims to have been the first manufacturers' representative to travel this territory dealing exclusively in refrigeration and air-conditioning supplies. To the best of his knowledge he still is the only such agent.

Refrigeration Maintenance Moves In Expansion As Business Grows

CHICAGO—Refrigeration Maintenance Corp., specializing in installation, service, and maintenance of all types of refrigeration and air-conditioning equipment, has moved to a two-story-and-basement building at 321-27 East Grand Ave.

New quarters of this firm, which operates in metropolitan Chicago and adjacent territory with a radius of 50 miles, provide ample space and facilities for the expansion necessitated by increased business volume.

Marsden & Wasserman Takes on Gilmer Line

HARTFORD, Conn.—Appointment of Marsden & Wasserman, Inc. as jobbers to handle the Gilmer line of belts in the Hartford area has been announced by officials of L. H. Gilmer Co., Philadelphia.

Refrigeration department of Marsden & Wasserman is in charge of J. Simons.

Perfex Controls Will Be Sold By H. W. Small In the 'Twin Cities'

ST. PAUL—The Thermal Co., Inc., jobbing firm of which H. W. Small is president, has been appointed representative in the "Twin City" district for Perfex Corp., Milwaukee manufacturer of heating and air-conditioning controls, according to an announcement by Walter E. Schultz, Perfex sales promotion manager.

Kurt Rose Forms Own Firm In Los Angeles

LOS ANGELES—Kurt W. Rose, recently appointed western district representative of Superior Valve & Fittings Co., Pittsburgh parts manufacturer, has formed the Kurt W. Rose Co. and has opened a warehouse here. He will maintain a complete stock of Superior diaphragm packless valves, flare fittings, and other products so as to facilitate immediate shipment to jobbers and manufacturers in this territory.

Service Men of Detroit Meet at Oberc's To Decide Code Action

(Concluded from Page 1, Column 2)

air-conditioning supplies jobber, and was conducted by Mr. Oberc and his assistant, E. H. Davey.

First meeting of the newly named committee will be held Thursday, Sept. 29, at the Oberc headquarters, 904 Baltimore. A ballot-box in which any refrigeration man represented by the group may drop questions or suggestions as to the committee's procedure also will be maintained at Oberc headquarters.

Named to the committee by acclamation were the following:

C. R. Anderson, manager of the Detroit branch of General Refrigeration Sales Co.; W. C. Cooper, service manager of the Detroit Frigidaire branch; H. C. Cuddebach, independent service man; R. C. Doremus, Detroit Ice Machine Co.; William G. Euth of Euth-Lambrecht Co.; M. Forsyth of Forsyth & McAnally; Henry Hodges, Detroit City Ice & Fuel Co.; Frank Houston, Commercial Refrigeration Installation Co.; C. J. Howe, Radio Distributing Co.; George Kunkle, Modern Refrigeration Sales & Service; George Murphree, Universal Cooler Corp.; J. E. Perry, independent service man; John Robertson, Grand River Electric Co.; Harry Rodey, Michigan Refrigeration Equipment Co.; R. Tudhope, independent service man; and H. Wann, independent service man.

Main attention of the committee, it appears from discussion at the meeting, will be centered on installation requirements as outlined in the proposed Detroit code, and whether or not they would make the cost of installation prohibitive, if put into effect.

Second half of the evening's program consisted of the showing of a pair of films, contrasting the operation of conventional controls with that of the "Polartron," by J. A. DePuy, Detroit representative of Minneapolis-Honeywell Regulator Co.

Dunbar To Represent Superior In South

ATLANTA — E. V. Dunbar has been appointed representative for Superior Valve & Fittings Co., Pittsburgh, in the states of Georgia, Florida, Alabama, Mississippi, South Carolina, North Carolina, and Tennessee, Kenneth M. Newcum, Superior sales manager, has announced.

Mr. Dunbar maintains offices at 631 Spring St. here. Before the World War, in which he served as submarine listener in the U. S. Navy, Mr. Dunbar was associated with the engineering department of General Electric Co., Cleveland.

In 1919 he became general manager of United Parts Co., Cleveland, and in 1924 he moved to Atlanta, representating two automotive parts manufacturers. From 1927 to 1931 Mr. Dunbar was sales promotion manager of W. D. Alexander Co., Atlanta, Georgia distributor for G-E's refrigerator division. He opened his present office in September, 1937 as a manufacturers' representative in the refrigeration parts and supplies field.

ANNOUNCING
FEDDERS
Model HCP-38
HIGH CAPACITY
CONSTANT PRESSURE VALVE
For use on large refrigeration and air conditioning installations to prevent suction pressure in coil from falling below desired point.
They make it possible to accurately maintain temperature of different evaporators when connected in multiple to one compressor.
Easily adjusted . . . they accurately control pressure within range of a few ounces.
Send for Bulletin 389.
FEDDERS MANUFACTURING CO.
Buffalo, N. Y.

WEATHERHEAD
Refrigeration Valves and Fittings
A complete line in SAE and Inverted Types
THE WEATHERHEAD CO., CLEVELAND, OHIO

Dayton V-BELTS
Silent, vibrationless, dependable, long-lasting. Powerful grip prevents slippage. A nearby distributor carries a complete stock for appliances and machines.
THE DAYTON RUBBER MFG. CO., DAYTON, OHIO
World's Largest Manufacturer of V-Belts

BRUNNER
Send for the New
REFRIGERATION CATALOG
Seven Models of Compressors
Fifty-eight Models of Highsides from ¼ H. P. to 15 H. P.
BRUNNER MANUFACTURING CO.
UTICA, N. Y.

Installation Methods

Askin Describes Installation Hookups For Some Unusual Commercial Jobs

By Joe Askin, Chief Engineer, Fedders Mfg. Co.

A LARGE number of rather unusual commercial refrigeration installations are apparently being made, and we are being swamped with requests for sketches showing how to make the connections for such installations.

Several of these are of exceptional interest at the present time and are herein described.

HOT GAS DEFROST

Fig. 1 shows the line connection for what is known as a "hot gas defrost." This connection is very simple, and yet, it is somewhat confusing to many service men.

A connection should be made between the expansion valve and the evaporator and **not** between the receiver and the expansion valve.

The shutoff valve should be arranged so that it can be made tamper-proof. The hot gas defrost line need not be over ¼-inch copper tubing for most commercial installations.

THE DUPLEX SYSTEM OF REFRIGERATION

Fig. 2 shows a "duplex" installation of two entirely complete and independent units.

Unit (1) is controlled by a pressurestat which is set to operate to take care of the refrigerator under normal conditions.

Unit (2) is controlled by a thermostat, the control bulb being placed in the refrigerator.

The temperature of the thermostat is set slightly higher than the temperature which would be obtained by operating Unit (1) alone.

What occurs is that when an excessively high service load is placed on the refrigerator, or the room temperature becomes exceptionally warm, unit (2) starts, and both machines operate in order to maintain the proper temperature in the refrigerator.

A TEMPORARY INSTALLATION OF A ROOM COOLING UNIT

If a customer has a commercial installation in his establishment which happens to have an over-sized condensing unit which operates at a low percentage running time, he may request that his office or some other small room be cooled with this same condensing unit.

In general, an installation of this type is of temporary nature and should only be encouraged with the thought in view that the customer at a later date would be more likely to desire the proper kind of an air-conditioning installation.

However, if the customer is willing to accept whatever cooling he can obtain, an arrangement may be worked out so that a unit cooler placed in the room to be cooled may give him the desired effect without interfering with the operation of his commercial installation.

Fig. 3 shows a layout in which a unit cooler placed in room F_2 cools this room when the condensing unit happens to be on the off cycle in so far as fixture F_1 is concerned.

In addition to the existing controls the additional controls necessary are:

H—hand switch for room cooler.

R—relay which breaks contact when energized.

B—main switch.

P_1—pressurestat for fixture F_1.

S_2—solenoid in suction line, opens when energized.

S_1—solenoid in air-conditioning unit liquid line, opens when energized.

The following letters represent the equipment which existed prior to this changeover:

L—line, source of current.

C—compressor.

K—condenser.

T—receiver.

M—motor.

P_2—pressurestat at compressor.

F_1—cold fixture.

F_2—room to be cooled.

The single solid lines represent refrigerant liquid.

Double solid lines, refrigerant vapor.

Single dotted lines, electrical.

The pressure control, P_1, is placed in the suction line leading from the refrigeration unit, F_1.

The solenoid valve, S_2, is placed adjacent to pressurestat, P_1. Be sure that this is placed closer to the compressor than P_1.

The liquid solenoid valve, S_1, is placed in the liquid line leading to the unit cooler.

Where 'Hot Gas' Defrosting Is Used

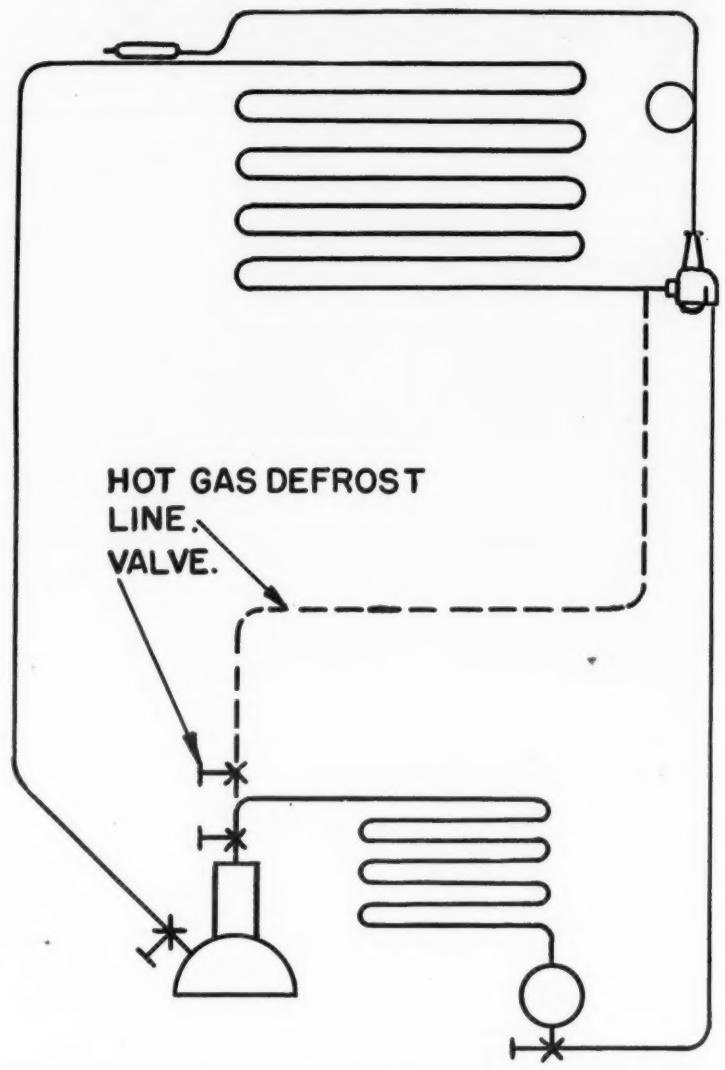


Fig. 1—Line connections where the "hot gas" method of defrosting is to be used.

A relay, R, is connected in order to break contact when it is energized and to make contact when it is de-energized. A single pole switch, H, is placed in the circuit leading to solenoid, S_1. The system functions as follows:

The machine operates and runs until the refrigeration unit, F_1, has reached its proper temperature as determined by the pressure control, P_1.

When the cut-out pressure of P_1 is reached, P_1 breaks contact which de-energizes the relay, thus making contact at the relay and energizing solenoid, S_1.

This opens the liquid line leading to the forcedraft unit cooler and allows the compressor to operate on the unit cooler in the room, F_2. Simultaneously solenoid, S_2, is closed shutting off the flow of gas from the unit F_1.

When fixture F_1 warms up the pressure increases and pressurestat P_1 cuts in which opens solenoid S_2, allowing refrigerant to be sucked from coil in F_1 and simultaneously breaks contact in relay R, which breaks contact at solenoid S_1, shutting off the supply of liquid to the unit cooler.

After F_1 reaches its low temperature, the cycle is repeated.

No provision is made for controlling the temperature in the room, F_2. The customer must be satisfied to obtain whatever cooling effect happens to be available after satisfying load requirement of fixture F_1.

In the electrical line leading to S_1 a single pole switch, H, is placed which may be opened before the customer leaves for the night.

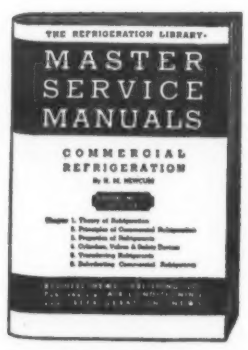
When H is opened the refrigeration may be on either fixture F_1 or F_2. If it is on F_2, then the suction pressure of the machine pulls down very rapidly on a vacuum, and the pressurestat, P_2, operates to shut off the motor.

If the machine is operating on F_1

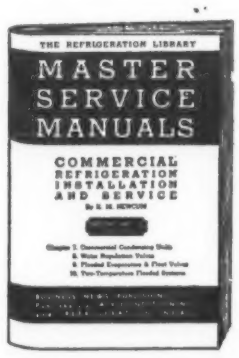
(Concluded on Page 11, Column 1)

Practical Data on Commercial Refrigeration Systems and Their Component Parts For Use by the Service Man

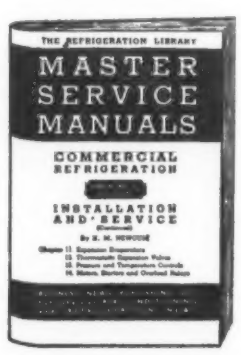
The series of Master Service Manuals devoted to the study of COMMERCIAL REFRIGERATION discusses the theory and principles of refrigeration and then presents a step-by-step discussion of the component parts of a complete commercial refrigeration system. These three manuals are devoted to a study of the types of refrigeration systems which are in such wide use today in installations in meat markets, grocery stores, restaurants, beer gardens, etc. They are designed as an advanced course of study for the service man who has already mastered the principles of Household Refrigeration and were written by K. M. Newcum who also wrote the Master Service Manuals on Household Refrigeration.



Commercial Manual C-1



Commercial Manual C-2



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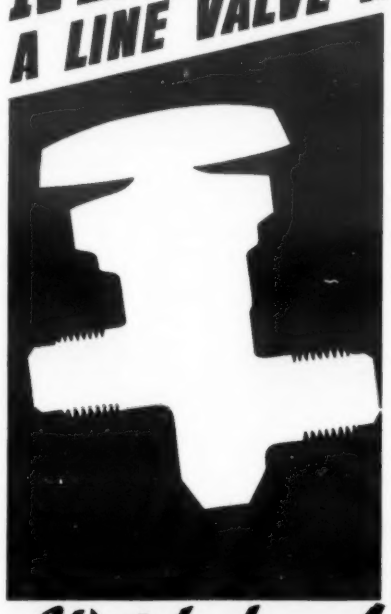

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Methods of Installing 'Unusual' Commercial Refrigeration Systems

(*Concluded from Page 10, Column 5*)

when switch H is pulled, then the machine will run until P_1 cuts out, shutting off solenoid S_2, which immediately allows the suction line pressure to pull down so that P_2 shuts off the machine.

P_2 is set at slightly lower cut-out pressure and slightly higher cut-in pressure than P_1.

Either P_1 or P_2 may make contact first. P_2 would make contact first if the compressor valves are leaking. If P_1 makes contact first then the gas from the evaporator passes into the suction line, and a moment later P_2 makes contact, thus starting the motor.

Jared Smith To Handle G-E Conditioners

COLUMBUS, Ohio — Jared A. Smith Co. has been organized here to distribute General Electric heating and air-conditioning equipment in the Columbus territory, which consists of 25 counties in central Ohio.

Mr. Smith, the company founder, is a graduate of Case School of Applied Science, class of 1924.

Method For 'Duplex' Installation

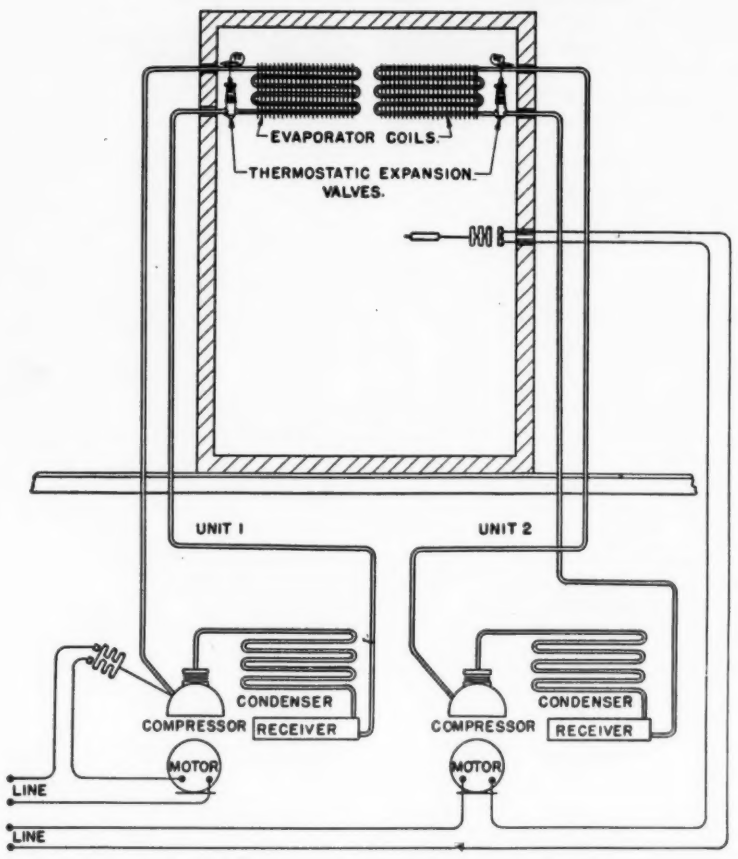


Fig. 2—A "duplex" installation of two entirely complete and independent units. Unit 1 is controlled by a pressurestat, and unit 2 is controlled by a thermostat.

Liquid Compound Seal For Seams Announced

DETROIT—A new liquid compound to be used as a permanent seal for joints and seams on equipment where gases, oil, steam, etc., are used has recently been developed by Michigan Chrome Co. here. The new product is called "Miccro Supreme Better Seal Compound."

Among applications claimed for it are pipe threads, face joints, tank seams, compressors, gaskets and valves, the coating of metal, and other spots in which leakage is liable to occur. The compound is said to offer protection against openings which might be caused by vibration, expansion, contraction, or chemical damage resulting from the contact of gases or solvents on metal surfaces.

Miccro seal compound is claimed to be completely insoluble in gasoline, oil, steam, gases such as Freon, methyl chloride, sulphur dioxide, and ammonia, and in the majority of commercial solvents with the exception of alcohol. It is said to be adhesive but elastic, capable of withstanding severe vibration without cracking.

Once applied, it is said to become a permanent seal; and it can be applied either with brush or fingertips. It is said to set quickly, so that equipment can be put back into use without much delay.

68,655 Vacuum Cleaners Sold In July; Price Up

CLEVELAND — Sale of 68,655 household vacuum cleaners in July brought total sales for the first seven months of the year to 747,838 units, third highest January-July mark in the history of the industry, reports C. G. Frantz, executive secretary of the Vacuum Cleaner Manufacturers' Association.

Only in 1936 and in 1937 were seven-month sales greater than this year, the 1937 total for the period being 1,083,170. The July total of 68,655 sales was down somewhat from the 85,918 units sold in June this year and was considerably below the 111,233 unit sales made in July, 1937.

Averge price paid for cleaners in the first seven months of the year was $60.43, an increase of nearly $6 over the average price for the same period last year, $54.79. Average price in July, 1938 was $61.74, compared to average price of $55.14 in July last year.

For Butcher, Baker or Grocer Who Wants Air Conditioning at Low Cost

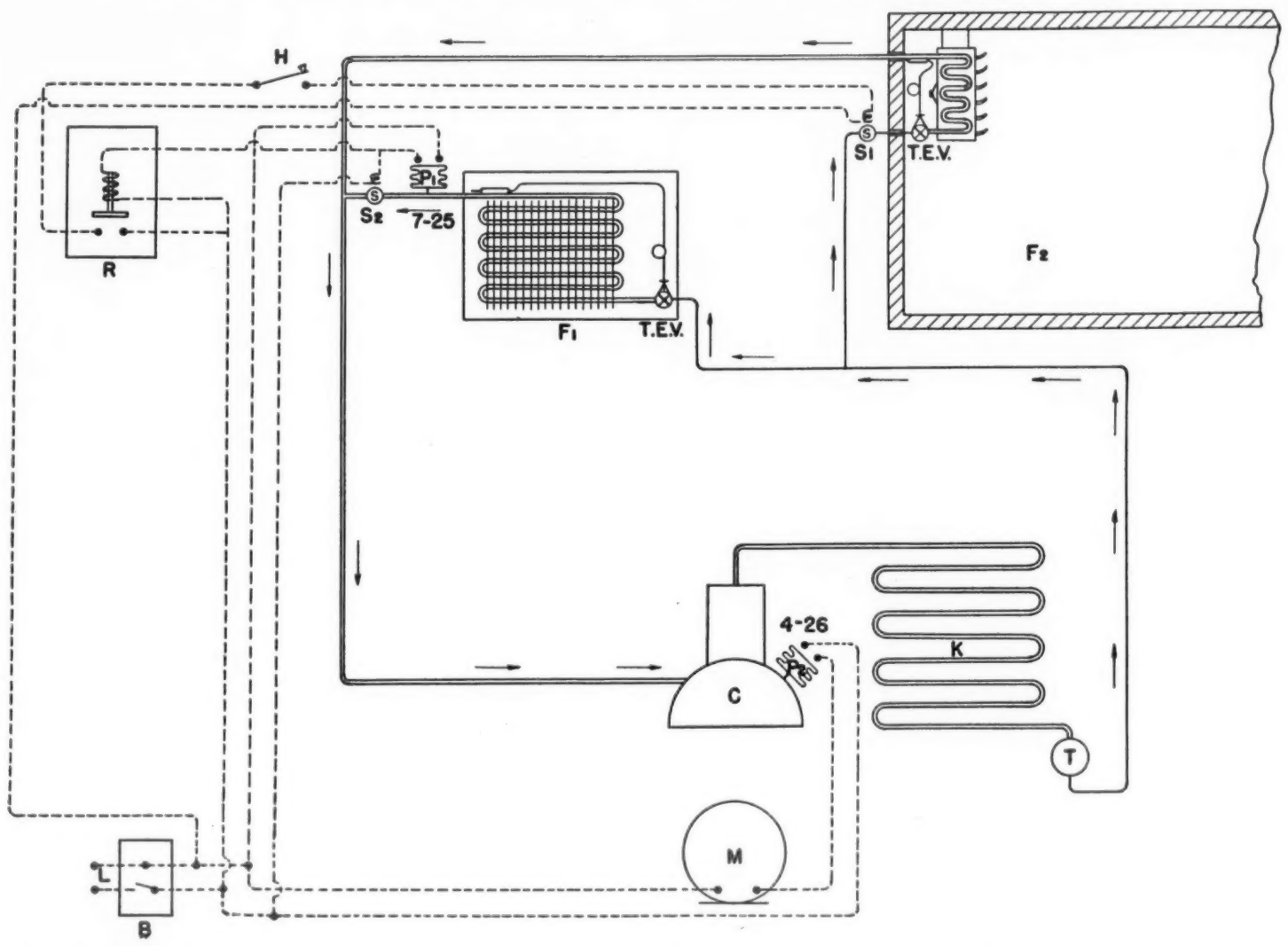
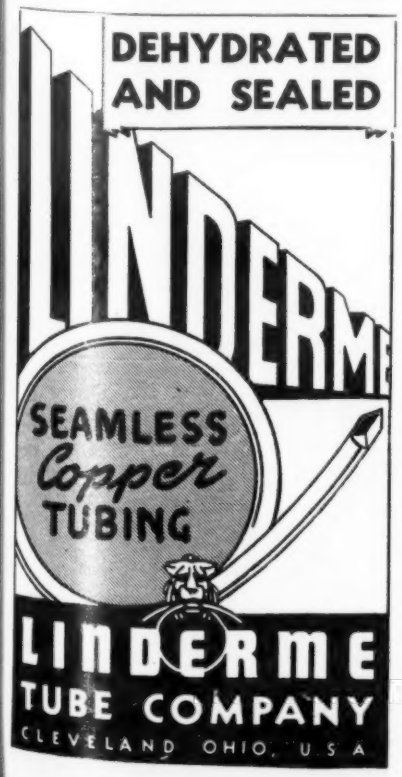


Fig. 3—Hook-up for some such system as a temporary room-cooling unit, where the refrigerating capacity of a unit doing one job is tapped to handle the extra new load. Single solid lines represent refrigerant liquid. Double solid lines represent refrigerant vapor. Single dotted lines are electrical lines.



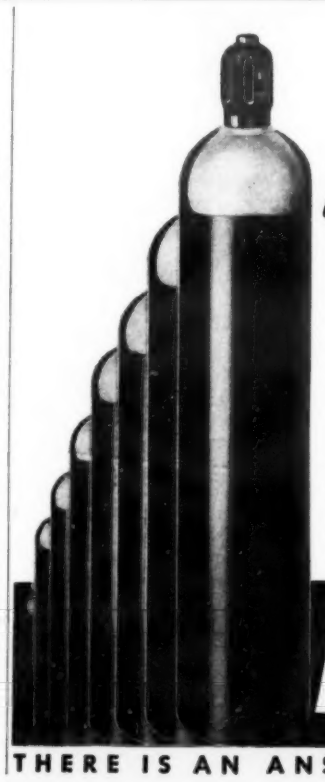
Lubrication of Roller Bearings Described

NEW YORK CITY—A 42-page illustrated booklet on ball and roller bearing lubrication has just been published by the Texas Co., producer of Texaco petroleum products, for free distribution to persons interested in lubrication problems connected with equipment of this type.

Discussed in the booklet are prediction of lubricant performance, the value of operating tests, relation of field to laboratory testing, bearing constructional features, lubrication of anti-friction bearings, types of lubricants, protection of lubrication, and application of lubricants.

Also outlined are the development of Starfak greases for use in bearing lubrication, and a schedule of Texaco lubrication recommendations for various types of ball and roller bearings.

Copies of the booklet may be obtained from the company's headquarters here, or from any of its district offices.



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Air Conditioning

Waukesha Gasoline-Powered Unit For Bus Cooling Has Evaporative Condenser

WAUKESHA, Wis.—A compact air-conditioning system devised for highway service has been designed by engineers of the Waukesha Motor Co. here, working in cooperation with Tropic-Aire, Inc. The new gasoline-driven direct-expansion systems, which are equipped with evaporative condensers, will be used by Greyhound Lines to cool some of its buses operating in inter-city service.

The Waukesha "3-Ton Ice Engine for Transport Vehicles," the designation given the device by the manufacturer, measures 17 x 24 x 44½ inches, and weighs less than 400 lbs.

LIKE RAILWAY UNIT

Utilizing the same basic principles of the Waukesha ice engine which has been used in railway service for a number of years, the new equipment is said to have ample capacity for maintaining a temperature differential of 15 to 40° F. between the outside and inside of a large commercial passenger vehicle.

With this wide range of capacity, comfort for passengers is assured under virtually all operating conditions, it is said.

Regulated by a thermostat located in the bus, the cooling unit is said to be automatic in starting, stopping, and speed control.

Completely self-contained, the highway air-cooling unit is so arranged that it may be supported beneath the chassis of the vehicle. Flexible leads are provided, which connect the ice engine to the permanent refrigerant and control lines built into the vehicle body.

A feature of the device is the simplicity with which it may be removed from the bus for inspection, adjustment, and service. The entire mechanism rolls out of its regular position in the vehicle on ball-bearing wheels running on tracks provided for the purpose. This feature of the device is covered by patents.

TYPE OF ENGINE USED

The unit is powered by a Waukesha gasoline engine which develops 14 hp. at 1,000 r.p.m. and provides 1½ tons of refrigeration at this speed. At normal operating speed—1,800 r.p.m.—the capacity is 3 tons of cooling. At 2,400 r.p.m., when the engine develops 18 hp., 4 tons capacity is reached to meet extreme temperature or load conditions.

The capacity provided for a 39-passenger Greyhound bus is 4 tons maximum, while the capacity necessary for a 60-passenger railway coach is 7 tons.

An entirely new design of engine was developed by Waukesha for the bus-cooling unit, which is said to combine the simplicity of an industrial Ricardo ell-head engine and the free-running lightness of modern automotive engines.

Lightness is obtained by the use of an aluminum alloy crankcase, gear case, flywheel housing, pistons, and cylinder head. The molychrome cylinder block is lighter than cast iron and more durable.

The drop forged, heat treated crankshaft is mounted on two large ball bearings to reduce friction and prolong life. The connecting rods are fitted with steel-backed, babbitt-lined precision bushings in the large end, and bronze bushings on the floating piston pin end.

LUBRICATION SYSTEM

Lubrication is by pressure to the bronze bushings—three in number—supporting the camshaft, and by pressure spray to the rods and gear train. The pistons, cylinders, valve tappets, and main bearings are oiled by crankshaft mist.

An unusual feature in so small an engine is the positive drive centrifugal pump used for cooling. An automatic make-up system keeps the radiator, which is located within the cooling chamber of the unit housing, filled at all times.

The engine also is air cooled by a centrifugal fan which draws air through the evaporative condenser of the refrigerating system, thence through the engine radiator, and over the engine, discharging it at the bottom of the engine compartment.

MODULATED BY PRESSURE

Variations in speed and refrigerating capacity are controlled by a modulation device connected to a fly-ball type governor and actuated by the refrigerant back pressure. This increases or decreases the governed speed when a change in cooling capacity is required.

The engine is equipped with automotive-type starter and ignition. Accessories include a float-feed carburetor with filtered, washed-air intake, automatic choke, thermostatic cut-out which stops the engine if oil or water supply fails, A-C fuel pump, and crankcase circulation.

Also contributing to the low weight of the system is the refrigerant compressor, which is of small size, high capacity, and a wide operating range, designed so that it may be connected directly to the engine.

ROTARY COMPRESSOR

The compressor is a rotary, 10-vane continuous pressure unit with moving parts and vanes of nitralloy stainless steel. One of its features is the built-in pressure-feed oiling system. It also has an automatic unloading characteristic which permits engine cranking without effort.

The compressor is equipped with large ball bearings so that it may be operated with full efficiency at high speeds. A special self-aligning and positively oiled refrigerant seal, which was developed for the Waukesha railway unit, has been adapted for the motor bus system. This seal floats on duprene rubber, and prevents leakage of the refrigerant under operating conditions.

A cushioned coupling on the compressor shaft connects it to the engine flywheel. The end bracket of the compressor is bolted directly to the flywheel housing of the engine. The direct drive provides positive alignment.

Another feature is the use of an evaporative condenser for the refrigerating system.

Because of the fact that air condensers are limited to normal operating temperatures, and because capacities are limited by excessive temperatures, such as are encountered on the desert, the evaporative-type condenser was adopted.

WATER TANK LOCATION

The water evaporated is supplied from an auxiliary water tank which may be located at any convenient place in the vehicle; the size of this tank is dependent on the duration of the run.

Maximum water requirements are approximately 7 gallons per hour; the average requirements are about 5 gallons per hour, though frequently it will not be more than 3 gallons per hour, depending upon the cooling demand, it is claimed.

The condenser is a fin-tube copper coil, which is sprayed with water through non-clogging nozzles. The water is circulated by a positive self-priming pump, developing approximately 10 lbs. pressure, and pumping 4 gallons of water per minute.

In order to accelerate the evaporation, a stream of air is drawn through the water spray and the coils. This air stream is then continued on through the engine-cooling radiator and finally through the engine compartment of the cabinet, and discharged from the bottom of the unit.

The engine, compressor, and condenser are mounted in a welded steel chassis, supported on six-ball bearing wheels. These wheels operate on a channel-type track, similar to that of a letter-file drawer. This arrangement provides for drawing the unit to the outside of the bus or vehicle sufficiently far to make any adjustment or service operation. The mounting tracks are insulated from the body of the bus by heavy rubber cushions.

Flexible tubes which permit pulling out of the unit are provided for the refrigerant lines, the water supply line, and fuel supply line, as well as electrical connections. This makes it possible to operate the unit when it has been drawn out from the body of the bus for tests and service.

HOW THERMOSTAT WORKS

When the thermostat in the bus calls for cooling and the engine on the system is not running, a relay closes the starter and ignition circuit through an intermittent cranking switch. The engine will then crank for a period of a few seconds. If the engine does not start, this circuit is opened.

This will continue for approximately five starting operations. In event the unit does not start then, a crank-limit switch disconnects the circuit until it is manually reset. This protection prevents excessive cranking in event there is a fuel shortage or any other irregular condition exists.

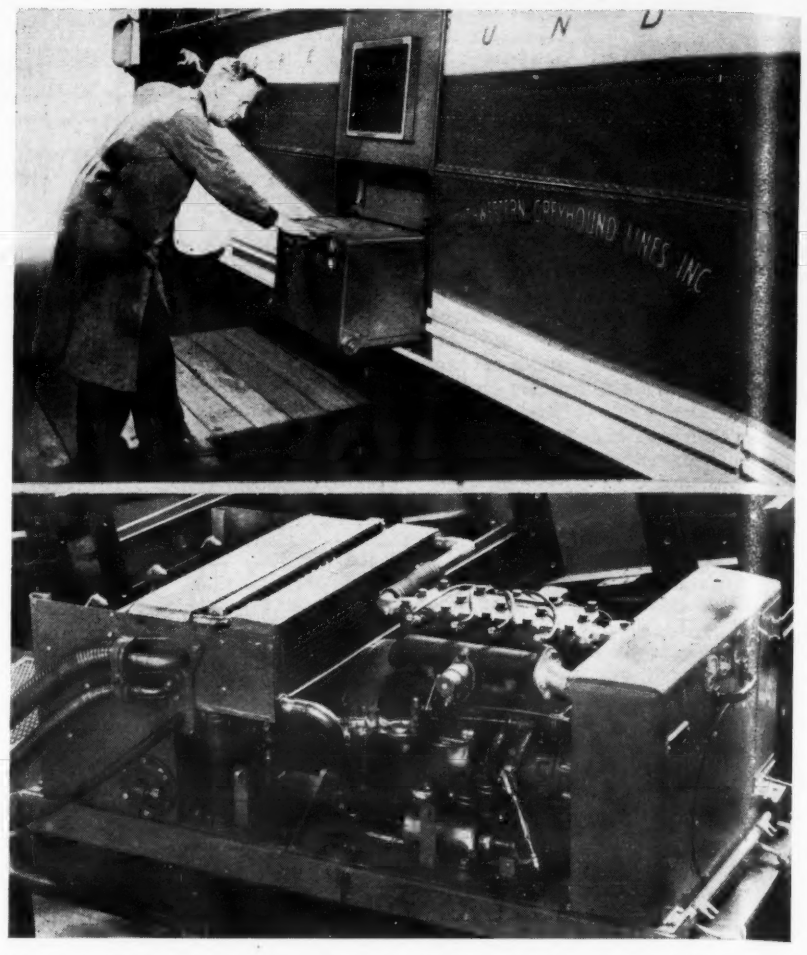
A vacuum gauge which discloses the manifold vacuum indicates the general operating conditions of the engine, while an oil gauge shows lubricating oil pressures.

The refrigerant receiver is equipped with sight glasses to show the level of the refrigerant, and may be located in any convenient point in the bus that is accessible for observation.

The unit is designed for installation within a sealed enclosure in the vehicle, so arranged that an air filter will be provided to filter all air entering the compartment for cooling the condenser and engine, and for ventilating the unit cabinet.

Aside from the cooling of buses and camp trailers, the unit is said to be adaptable to refrigeration of trucks transporting frozen foods, perishable foods, milk and cream, vegetables, and other products requiring refrigeration.

'Ice Engine' To Cool Bus Passengers



(Above) The Waukesha unit for transport vehicles being withdrawn for inspection. (Below) General view of the unit, the engine being shown with centrifugal governor and speed modulation cylinder connected to it. The compressor is mounted directly to the engine bell housing and is shown beneath the engine radiator which is directly above and to the rear of the engine flywheel housing. Water circulation in the engine cylinder block is by centrifugal pump mounted at the rear of the governor housing. Above the carburetor is shown the automatic choke for starting. The flexible metal lines shown at the extreme left are the refrigerant high and low-pressure lines. The air is drawn first through the refrigerant condenser, then through a baffle to trap the moisture, and then through the engine radiator into the engine compartment.

Zone System Used In Brazilian Building

RIO DE JANEIRO, Brazil—A 290-ton central station air-conditioning system has been installed in the new Edificio Andorinha to condition the top 11 floors of this 13-story office and shop building. Installation was made by General Electric, S.A., Carrier distributor for Brazil.

The system employs a spray-type unit which supplies conditioned air to four individual zone systems, each of which has its own supply fan, air filters, and temperature controls.

Return air for the central spray unit and by-passed air for the zone systems is handled by a separate fan drawing air from offices through grilles in the doors between the offices and corridors, down the corridors into three return risers with grilles located in the corridor walls.

Total amount of air supplied to the building is 83,800 c.f.m. Carrier horizontal slotted high-pressure outlets are used for distributing the air within the rooms.

Refrigeration is provided by a straight 9⅞ CZ Carrier centrifugal machine, with single stage economizer.

The system is designed to maintain a temperature of 79° F. with a relative humidity of 55%, when outside temperatures do not exceed 90° F. dry bulb and 79° F. wet bulb.

Indicative of the investment value of air conditioning in office buildings is the fact that the Andorinha was 60% rented by the time that construction was underway.

Extension Course Offered By U. of Michigan

DETROIT—One course in problems of heating, ventilating, and air conditioning is being offered by the extension division of the University of Michigan in Detroit beginning Sept. 19 at 7 p.m.

In charge of Asst. Prof. C. F. Kessler, the class will be held at room 307, Northern high school, 9026 Woodward Ave.

Subjects to be covered by the course are heat losses; building materials; ventilation requirements; fuels; stokers and oil burners; design and installation of warm air, steam, and hot water systems of heating; the use of exhaust steam in industrial plants; unit heaters; central heating and air conditioning.

THE BUYER'S GUIDE

The NEW Percival

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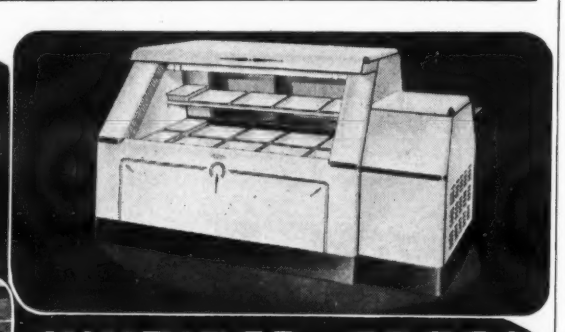

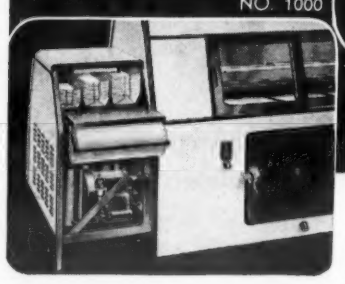

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Service Methods

Two Field Methods of Determining Whether Air Is In Unit & a Way of Purging It

PRESENCE of air, or other non-condensible gases, in the condensing unit of a refrigeration system means trouble. Not only is more cooling water of a given temperature required to maintain a given head pressure if air is present, but the air also serves to oxidize the unsaturated compounds present in the lubricating oil, resulting in the formation of sludges and organic acids.

These acids result in corrosion of metallic parts and, it is also believed, tend to further the breakdown of some of the organic halide refrigerants now in use, especially in the presence of moisture.

In small systems, the air may be purged from the condenser by simply releasing all of the gas and then recharging the system. In the larger commercial and industrial installations, however, the cost of the gas lost in this way makes this means of air purging prohibitive.

To combat this problem, R. S. Heym, Detroit refrigerating engineer, has developed or has contributed to the development of two field methods of detecting the presence of air in condensers and one means of removing the air without losing the charge of refrigerant in the system.

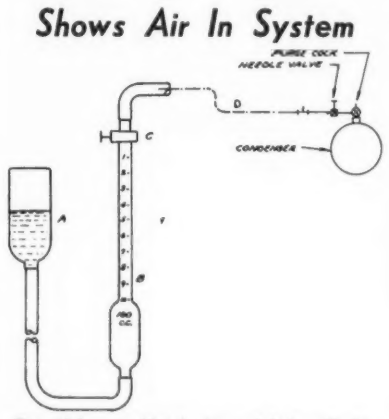
First of the two methods of air detection is known as the vapor pressure method. With the compressor out of operation and the liquid shut-off valve on the condenser closed, cooling water is passed through the condenser until the temperature of water entering and leaving the condenser is the same and the gauge pressure remains constant.

Provided there is liquid refrigerant present in the condenser, the temperature of the water will be the same as the temperature corresponding to the gauge pressure at saturation. If the gauge reads higher than it should at the existing temperature, the presence of air is indicated.

An accurate test gauge and accurate thermometers are required if the test is to be reliable, as well as refrigerant pressure-temperature data. This method is not reliable if an appreciable amount of oil is present in the liquid refrigerant in the condenser, the effect of oil being to give a pressure lower than that corresponding to the saturated vapor temperature.

The second means of air detection advocated by Mr. Heym is known as the absorption method, and is based upon the fact that ordinary refrigeration oil is a very good absorbent for Freon, and no doubt for all the organic halide refrigerants.

Shows Air In System



By this method, in which oil is used, it is possible to get accurate measurement of the amount of air in the system.

Use of this system necessitates only the simple apparatus diagrammed in Fig. 1. Oil used by Mr. Heym in this apparatus was Suniso No. 4, which has the ability to absorb at room temperature approximately 95% by volume of a sample of pure Freon vapor. The following procedure should be employed in using the absorption method:

1. Open cock C (with rubber tube D removed) and elevate container A until oil comes out the top of cock C.

2. Open purge cock on condenser and regulate so that there is a small flow of gas through the rubber tube When the tube has been purged, place the end of it over top of cock C. When pipette B is filled to the 100 cc. mark, close cock C.

3. Shake tube B (to aid in absorption of the Freon) until constant readings are obtained. The absorption time required ordinarily is not more than five minutes.

4. The volume of unabsorbed gas in excess of 5 cc. is the volume of air present.

5. Prior to making an analysis, it is advisible to check the apparatus with pure Freon. Fresh oil should be used after a few tests have been made. The oil can be reused if heated to expel Freon and then cooled.

After presence of air has been determined by one of these methods, the air may be removed from the condenser by means of the following procedure (illustrated in Fig. 2):

1. Run a ¼-inch line from purge cock of main condenser to valve D.

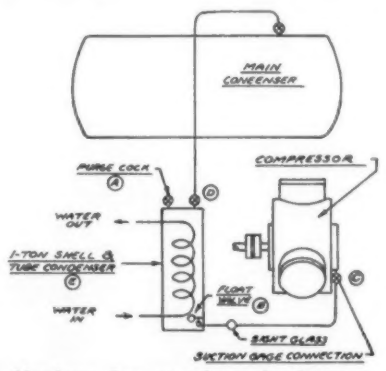
2. Run water through small condenser E. Liquid condensed will be returned to compressor suction gauge connection C.

3. The atmosphere in the small condenser will gradually become rich in air (if air is present) after compressor has been operated for an hour or so.

4. Test for presence of air in small condenser with the air detector, and if a lot of air is shown to be present, close valve D and purge the small condenser.

This outfit could be left installed all day after completing installation of a large unit. It would not be necessary to use it, of course, if, after installation and operation, no air was detected.

To Purge From Condenser



Hookup for purging air from a large condenser, through the use of a small condenser.

'On-Off' and 'Throttling' Controllers Introduced

BROOKLYN—Development of two new direct-set indicating controllers, one for pressure and the other for temperature, has been announced by C. J. Tagliabue Mfg. Co.

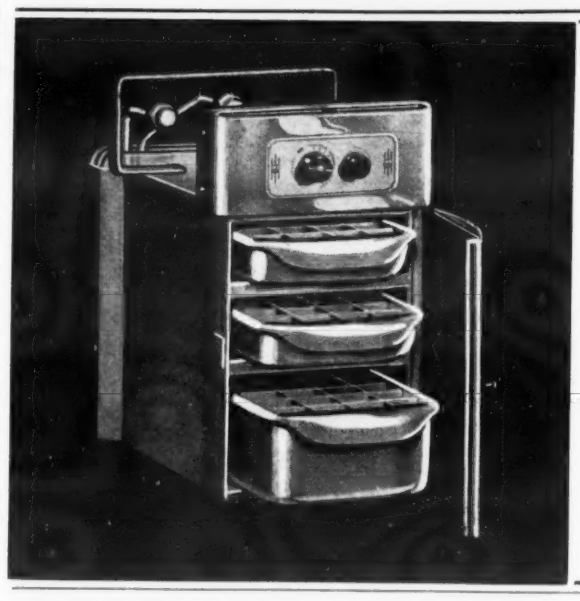
Designed for ruggedness and operating convenience, the instruments have a water-proof aluminum case, finished with black enamel and chromium. Included also are all the latest Tag developments, such as interchangeable calibrated tube system, safety link for range protection, pointer arm brackets with bearings at each end.

The indicating controllers can be supplied in two types, "on-off" or "throttling." The "on-off" controller will open the diaphragm valve if the temperature is slightly below the setting point, and will close the valve if temperature is slightly above.

"Throttling" type is identical with this, except for the flapper mechanism. The instrument utilizes an adjustable flapper, which is said to provide a convenient and exacting sensitivity adjustment from hair-line to 100% throttling range.

Both types have the direct-set feature, and both the white control pointer and the red setting pointer indicate on the 5½-inch graduated scale, offering a direct reading for checking control performance.

THE BUYER'S GUIDE



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Industrial Relations

Management Must See To It That Public Learns Business Is & Will Be Responsible For Its Progress, Asserts Lewis Brown

WASHINGTON, D. C.—Only as the public understands the significance of what industry has contributed to the nation's growth and progress can the public be expected to go forward with industry to obtain greater benefits in the future, declared Lewis H. Brown, president, Johns-Manville Corp., in an address on management's aims and responsibilities before the Seventh International Management Congress here Sept. 20.

"The most important characteristic of the world in which we live today is the constantly accelerating tempo of life and its accompanying process of change," Mr. Brown said.

CHANGE IS THE ORDER

"The very rapidity of this change requires from those who would keep abreast of these dynamic forces, an alertness, a flexibility, and an adaptability, which constantly revise methods and techniques in meeting these new and unprecedented conditions."

Mr. Brown pointed out that the essential characteristic of 19th century industry was that barter and trade and manufacturing were carried on like agriculture, as small businesses; they were conducted within local areas and managed by "owners" or "partners." There were but few large corporations.

But during the last 25 or 30 years, under the continuously exerted pressure of change in this and other countries, and with the new widespread ownership of business by millions of shareholders, there has been developing an entirely new type of business executive who is a professional manager, not owner, he declared. These new industrial executives differ widely from the owner-managers who preceded them in ideas, ethics, social concepts, and methods of management.

'SCIENTIFIC SPECIALISTS'

"The members of this new professional group are still called business men, but in reality they are scientific specialists," said Mr. Brown. "They must plan ahead with the vision of the engineer; they must estimate prospective income and expenditures with the exactness of the mathematician; they must be as receptive to advances in technical knowledge as is the research student in his laboratory.

"Their knowledge of finance must approach that of the banker; they must be as keen a student of human nature as a psychologist; have the instinct of a teacher; the legal mind of an attorney; and the impartial attitude of a judge. In addition they must keep abreast of new techniques and of the literature of their profession which today is as voluminous as that of law or medicine, architecture or engineering."

One of the more serious handicaps under which industry operates today is the public's lack of knowledge of the extent to which the concept of enlarged social responsibility is now accepted within industry and by the present day leaders of industry, the Johns-Manville president stated.

"The public still thinks of management of corporations, and of business, in pre-war terms," he said. "But the modern world has moved so rapidly that those days and those ways are ancient history. In hundreds of companies and corporations, science in management is now the rule rather than the exception.

"Before the aims and responsibilities of modern industrial management can be defined so that they are understandable to a critical public, the accomplishments of this past quarter-century should be briefly touched upon. Scientific management must be interpreted in terms of its contributions to improving the lot of the common man, to providing an increased well-being for the ordinary wage-earner and his family.

"Let me point out a few of the milestones that were passed between the years 1900 and 1930. In that period the population of the United States increased by 51 million people. Of this increase less than 4 million persons were absorbed in agriculture. The remaining 47 million people were dependent for their livelihood upon industry and allied occupations.

WHAT BUSINESS HAS BROUGHT

"In these three decades, the output of American factories increased from 11 billion dollars worth of manufactured goods per annum to more than 70 billion dollars worth of goods. As against a population growth of 70% in a generation the volume of manufactured goods multiplied by over 500%, and in quality by perhaps 1,000%."

Mr. Brown emphasized that to record the facts, file the records, and keep the books of modern industry takes nearly as many clerks as it took wage earners to produce the manufactured goods of a generation ago. The total of wages paid in wholesale and retail distribution in 1935 was three times the earnings of all the wage earners in all manufacturing industries in 1900.

"While industry was affording support for over 47 million additional people, it was also raising the national income from 16 billion dollars to 80 billion dollars," he said. "It was increasing the national wealth from 88 billion dollars to 362 billion dollars. While the population was increasing by 70%, the number of wage earners in manufacturing industry increased by 90% and the wages paid in manufacturing increased by more than 500%."

ALL-TIME RECORD

Nowhere, in the history of man, can such a record of achievement in so short a span of years be duplicated. These accomplishments did not just "happen." They were the product, not of government, but of a free people, applying to the tasks at hand limitless energy and resourcefulness. They were no less the product of a great faith—a belief in individual liberty which made this nation for generations a shining beacon to the oppressed of every land. Here was opportunity and a boundless future.

"In the complex industrial society under which we now live, management no longer represents, as formerly, a single interest," declared Mr. Brown. "Increasingly it functions on the basis of a trusteeship, endeavoring to maintain a proper balance of equity between four basic interlocking groups:

"1. The shareholders—the millions of people in all walks of life who join together to provide the capital, and thus the tools indispensable to modern production.

"2. The jobholders—those who, by brain or physical energy, make the tools productive.

"3. The customers—those constituting the great army of purchasers who, by comparing one product with another, by closely scanning prices and quality, energize the competitive system in its constant search for improvements that make for progress.

"4. The public—those who are the indirect beneficiaries of this manufacture and interchange of goods and services. They, the public, through their government, are the ultimate umpires, insisting that all participants in the transactions of business receive a fair deal."

Regarding labor, Mr. Brown said that responsible labor leadership upholds the principles on which rests the American system of free enterprise. It accepts the fact that labor can prosper only as industry prospers. It understands that high wages are dependent upon efficient tools and that those who provide the tools are entitled to a fair return for their hire.

Few differences of opinion are revealed when these underlying fundamentals are analyzed, he continued. Labor is interested in fair wages and steady employment. Modern mass production methods rest on the basic thesis of the greatest possible output of goods at the lowest possible price.

PAY-AS-YOU-GO PENSIONS

Modern management believes in provision for old-age pensions and unemployment relief, said Mr. Brown. But the question may well be raised whether, under prevailing business conditions, employes and employers should assume the burden of creating, as the Social Security statute provides, a vast financial reserve for future contingencies over and beyond present needs; and whether these scheduled payments should not be revised to a pay-as-you-go basis.

"The principle of collective bargaining is now established by law," he told the assembly. "While many provisions of the National Labor Relations Act may justly be criticized as being discriminatory, and obstructing rather than furthering industrial peace, yet its essential purposes will endure. Crude and faulty as the statute is, it represents an attempt to substitute collaboration for conflict; its weaknesses will be corrected by amendment, as mutual confidence between labor and management replaces present suspicion and distrust."

Turning to government's role in the matter, Mr. Brown said that there are many evidences that government will, in the future, exercise an increasing voice in the conduct of business.

"Once bureaucratic regulations are established, they are seldom, if ever, abandoned," he averred. "What we must strive for, therefore, is wise and intelligent supervision which aids rather than hampers business. That should be a realizable goal.

GOVERNMENT CONFUSION

"Unless we are entering an era of political exploitation, whereby government is operated by and for the benefit of a vast party machine, rather than 'for the people and by the people,' then government itself should welcome the collaboration of technical experts, trained in business and understanding the problems of business, who can bring to these supervisory posts the vision and the skill that is required. Government needs to profit by industry's example and utilize, far more than it has in the past, this new profession of Scientific Management.

"Adding to these misunderstandings between business and government, and therefore tremendously increasing the specific problems of business management, is our present confused state of mind as a nation. We are torn between contradictions. We seek to have more by producing less; we try to make money buy more by decreasing its value. We strive to create employment and at the same time pursue relief policies that encourage idleness. We hold thrift a virtue and then set an example of profligate spending.

"The right hand of government asks business to do something and the left hand berates business for doing it. Taxes take an ever-increasing proportion of business profits; yet at the same time industry is being urged to put more men back to work. Federal monetary policy shifts from inflation to deflation and then back to inflation again. In short, we are attempting, as H. G. Wells aptly describes our great American experiment, 'to raise the temperature by boiling the thermometer.'

"The problem of readjustment is two-fold: first, reorientation of business men to the great economic and social forces which now surround and control their own activities; second, an appreciation, by government officials particularly, that something more than hammers and monkey wrenches is needed to repair the intricate and delicately balanced mechanism of the nation's economic life. We are witnessing, as Dean Donham of the Harvard Graduate School of Business Administration points out, a political revolution in which 'we should face the inevitability of experiments and plan our undertakings accordingly.' Let me cite his warning of the dangers in our present situation:

DANGERS OF EXPERIMENT

'Too rapid or too far-reaching political experimentation will, by creating and accelerating overwhelming fears, change and destroy freedom.

"So great is the inter-dependence of modern industrial society that, however efficient any single corporation may be within itself, it yet may fail in the proper discharge of its functions because of factors or conditions wholly outside itself. These outside relationships are today all important, and are thus aptly described by Dean Donham:

'As business men we have isolated ourselves. We have neglected sentiments and emotions. We have forgotten that man is a social animal; that reason is less important than sentiment; that behind our emotions there is a million years of evolution while behind our logic there is only a relatively brief history. We have disregarded social groupings, social routines, and the little ways that tie men together. We have magnified the importance of economic institutions and forgotten the dependence of these institutions on social stability.'"

'CREED OF MANAGEMENT'

Concluding his address, Mr. Brown presented a "Creed of Management," declaring:

"We who are responsible for the management of industry in supplying the needs of the public for goods and services and who recognize our obligations to stockholders and employes, believe,

"That we should constantly seek to provide better values at lower costs so that more of our people can enjoy more of the world's goods.

"That we should strive to develop the efficiency of industry so as to earn a fair return for the investing public and provide the highest possible reward for the productivity of labor.

"That we should stimulate the genius of science and utilize the methods of research to improve old products and create new ones so as to continuously provide new fields of employment for the present and the coming generations.

"That management should encourage fair trade practices in business which, whether effected by competition or cooperation, will be so shaped as to be for the best interest of our customers and of society as a whole.

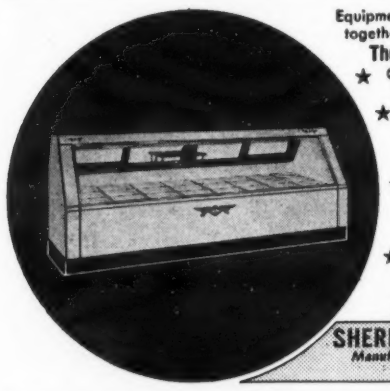
"That it is management's duty to be alert to its own shortcomings, to the need for improvement, and to new requirements of society, while always recognizing the responsibility of its trusteeship.

"That business in this country has never been what it could be and never what it yet will be."

Published on this and the facing page are papers which were presented last week at the Seventh International Management Congress, held in Washington, D. C.

These papers have been selected because they take a broad viewpoint on the problem of industrial and public relations, and because they propose specific objectives and discuss some methods of obtaining them. Other papers from the congress may follow in a later issue.

THE BUYER'S GUIDE



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Management Must Be Given Freedom, Robertson Says

WASHINGTON, D. C.—Business management must have freedom to try new ways and improve old ways, declared A. W. Robertson, chairman of Westinghouse Electric & Mfg. Co., in a talk delivered at the first session of the Seventh International Management Congress, held here Sept. 19 through 23. Two thousand delegates from 21 countries attended the session.

Mr. Robertson pointed out that government's greatest threat against management lies in restrictions which, by destroying management initiative, ultimately will destroy management.

"Government is the great enemy of initiative," Mr. Robertson stated. "Its chief duty is to make rules and regulations, and every rule is a curb on freedom, and danger lies in making everything and everyone conform to a type."

Rebutting charges that business profits are too high and that executives' salaries are excessive, Mr. Robertson said management might properly be criticized for making too little money instead of too much.

"The profits are so small, as a rule, that I am surprised the stockholders do not form a union to demand a greater return," he said. "Perhaps they need only a John L. Lewis to arouse them."

As for executives' salaries, Mr. Robertson countered that high-salaried executives receive their large remuneration only so long as their efforts permit such payments, and that in the average company the salaries of the top men are less than 1% of the total payroll.

Mr. Robertson then parried charges that private enterprise is responsible for unemployment by saying, "Private enterprise is engaged in providing goods and services for others in a highly competitive market. If the public, or consumer, wants the goods and services and buys them, then business has need for labor and can give employment, but unless it can sell its products first it cannot give employment."

"If management holds out the hope of employment today," Mr. Robertson said in urging business men to study possibilities of stabilizing employment, "it must not shatter that hope tomorrow.

"Management should be able to plan its work so that improvements, major repairs, and expansion is done in periods of depression when labor might otherwise be unemployed.

"This means that private enterprise must have sufficient funds to carry it through depressions with confidence. Government must assist management in this laudable undertaking and should be interested in assisting it to maintain a sound financial condition rather than weakening it by unwise taxation."

Sparks-Withington Has Hospital Benefit Plan

JACKSON, Mich. — Harry G. Sparks, president of the Sparks-Withington Co., manufacturer of refrigerators, radios, and horns, has announced the inclusion of hospitalization benefits in the company's group program, which for a number of years has provided Sparks-Withington employes and those of Sparton-of-Canada, Ltd., London, Ont., with life insurance, now totaling nearly $700,000, supplemented by accident and health coverage.

More than 500 workers in the parent company and its Canadian affiliate are affected by the addition of hospitalization benefits to the group program, which is being underwritten in full by the Metropolitan Life Insurance Co. on a co-operative basis whereby the employer and employes share the cost.

Under the group plan as now constituted employes will receive hospitalization benefits ranging from $3 to $5 a day, in addition to the life insurance and sickness and accident protection provided under the terms of the original contract.

The group plan also includes visiting nurse care and the periodical distribution of pamphlets on health conservation and disease prevention.

NLRB Ruling Given on Emerson Electric Case

ST. LOUIS — Emerson Electric Mfg. Co. has been found guilty of unfair labor practices on two counts, and not guilty on a third count, in an intermediate report of Trial Examiner Horace Ruckel of the National Labor Relations Board.

The examiner recommended that the company reinstate with back pay an employe discharged last November, and recall a book of "rules and information." He held that the company was entitled to fix a rate of pay on a new assembly operation without consulting the union, United Electric, Radio & Machine Workers of America, a CIO affiliate, which filed the complaint.

Employe whose reinstatement is recommended was discharged when he failed to report for work last Nov. 24, when he had assisted in picketing Ford Motor Co. and had been arrested. At the hearing last May, he testified he had called his foreman and explained the reason for his absence.

The examiner held that he would not have been discharged if his absence from work was from any cause other than assisting a labor organization by picketing. Pamphlet of "rules and information" issued by the company, the examiner held, was an attempt to coerce employes.

Recipients of G-E Loans For Education Named

SCHENECTADY, N. Y.—Twenty-four employes or sons of employes of General Electric Co. have been granted a total of $4,550 in loans from the General Electric Educational Loan Fund and the Gerard Swope Fund at Union College, here.

The loans given by the educational loan fund are for students either attending or desirous of attending any accredited college, while the Swope fund is for students at Union College only.

In addition, William M. Daly and Harry E. Stevens, Jr., sons of workers in G-E's Schenectady works, have been granted four-year Charles P. Steinmetz scholarships to attend Union College. These scholarships were established in 1924 at Union College by General Electric Co. in honor of Dr. Steinmetz, and are provided from a fund of $40,000.

Four previously granted Steinmetz scholarships will remain in force for the coming school year. These are held by Dominick De Lisa, Walter A. Fallon, Jr., Edward R. Kane, and John D. Haigh, who will resume their studies at Union College next month.

The 11 students who will receive loans from the General Electric Educational Fund (granted on the basis of scholarship, character, and personality), together with their residence and college which they will or are attending are: Anthony L. Anderson, Jr., Erie, Pa., Grove City College; Francis J. Avery, Jr., Pittsfield, Mass., Ohio State university; William H. Bell, Jr., Schenectady, Princeton university; Joseph R. Blackburn, Schenectady, New York State College for Teachers; Charles D. Doyle, Schenectady, Iowa State College.

Gough T. Grimes, Scotia, N. Y., Iowa State College; Robert V. Henderson, Lynn, Mass., Boston College; Harry R. Mitchell, Fort Wayne, Ind., Purdue university; Ralph Parkman, Erie, Pa., University of Pittsburgh; Edward R. Skotarczak, Schenectady, Cornell university; and Robert A. Spentz, Erie, Pa., Pennsylvania State College.

The 13 young men granted loans from the Swope fund at Union College are: George S. Becker, Thomas Corrigan, Robert W. Hobday, John A. Kilcoin, Richard H. Marvin, Frank Mele, Frank H. Nolte, Howard E. Sheffer, George H. Shell, Edward Tajkowski, Walter F. Thiessen, Fred Townsend, and Henry W. Weisheit, Jr.

Edgerton Electric Sales Moves Headquarters

EDGERTON, Wis.—Edgerton Electric Sales, Westinghouse dealer, has moved from the P. M. Ellingson building to the Hammond building.

Charles Francis, who has been associated with Fred Fuchs in the business, has purchased Mr. Fuchs' interest and is now sole owner.

2,000 Experts on Management Meet

(Concluded from Page 1, Column 4)

speaker said. "If the cost of manufacturing cannot be decreased in such lines," he added, "then an effort must be made to clothe them with a rarity value or a fashion pre-eminence."

Speakers at the congress voiced the conclusion that business is now entering a new and scientific era, in which labor and the consumer already have begun to receive the recognition which an oversight in management has denied them in the past. More than 2,000 business experts of the United States and 20 other countries were present.

American representatives took for their thesis the optimistic viewpoint that business in this country has never been what it could be, and never what it yet will be. To attain this objective, however, the science of management proposes many reforms.

One of the first developments should be the training of business men, said Robert R. West, Danville, Va., textile manufacturer. To a large extent, business men "just happen," Mr. West said. Technicians, on the other hand, are highly trained.

Deadlock between government and business during the last five years has been largely due to the fact that the government has had the misconception that management represents solely or primarily the investor, said Dr. Virgil Jordan, president of the National Industrial Conference Board.

Vital importance of ending this deadlock, he pointed out, is shown by the fact that the per capita income in goods and services in the United States is now actually less than it was 30 years ago.

Management planning of the future will give increasing attention to health and medical programs.

"The disaster of disabling sickness," R. R. Zimmerman, director of personnel for the Federal Home Loan Bank Board, told the congress, "ranks second only to that of economic depression as a factor in bankrupting the employe and undermining his confidence."

J. A. Berger of Marks & Spencer, Ltd., London, said that his company provides complete health and medical services for 18,000 employes at a cost of two-thirds of 1%.

Dealer Held Responsible In $3,000 Home Fire

(Concluded from Page 1, Column 5)

tion Association of Alameda and Contra Costa Counties.

According to the association's report on the happening, the householder telephoned in for a service man to come out and service a refrigerator. The service man says, under oath, that he pumped some new refrigerant into the coils, tightened up a few nuts, etc., and did not touch the motor.

That night the house burned down. When the ashes cooled, a fire department official went into the basement, dug out the motor of the refrigerator, and gave it as his expert opinion that an overheated motor caused the fire.

As a result, the association reports, a judgment of $3,000 was given against the merchant, because presumably the service man did not discover that the motor might get too hot.

THE BUYER'S GUIDE

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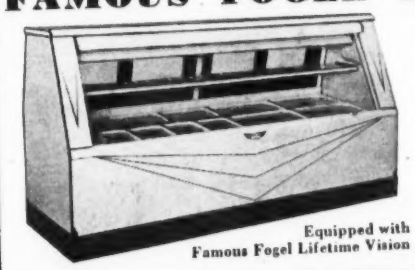

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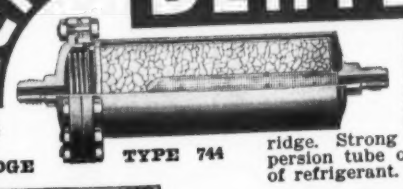
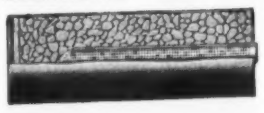
MODERN MACHINE WORKS, INC. 5353 S. Kirkwood Ave. Cudahy, Wisconsin

HENRY CARTRIDGE DEHYDRATOR



TYPE 74 REFILL CARTRIDGE

TYPE 744



Easy to refill as dehydrant cartridge can be readily removed and new unit quickly substituted. Dispersion tube for increasing drying efficiency and minimizing pressure drop is incorporated as integral part of refill cartridge. Strong spring provides positive seal of dispersion tube on inlet fitting, preventing by-passing of refrigerant. **Choice of 5 dehydrants at same price.**

HENRY VALVE CO. 1001-19 N. SPAULDING AVE. CHICAGO, ILL.
Stocked By Leading Jobbers

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ARE WE PLANNING FOR THE FUTURE?—Most Certainly!

1. Ask about our new hermetic unit.
2. Ask about our new "BIG FOUR".

TECUMSEH PRODUCTS CO., TECUMSEH, MICH.